AMERICAN Journal of Mining,

Engineering, Geology, Mineralogy, Metallurgy, Chemistry, etc.

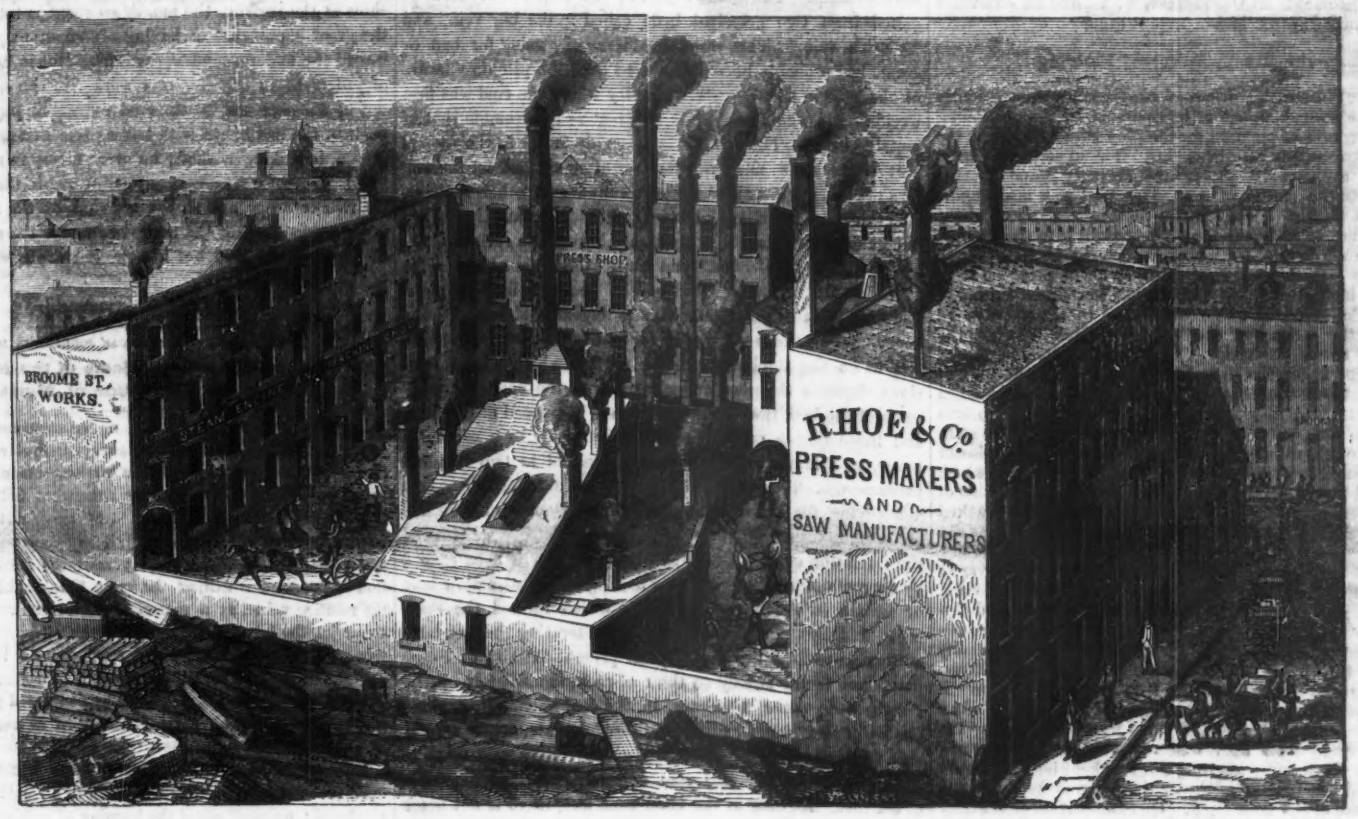
VOLUME V.—Number 21.
New Series.

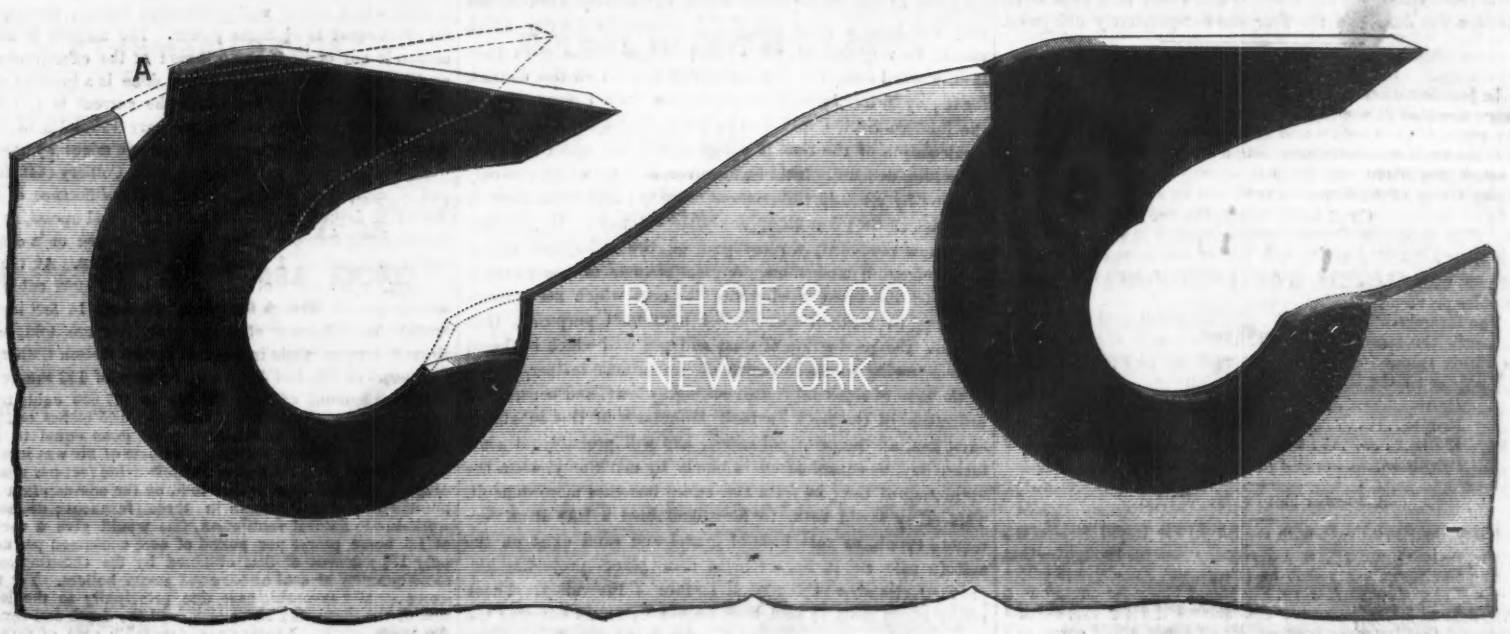
NEW YORK, MAY 23, 1868.

$4 A Year in Advance.
Single Copies Ten Cents.

MANUFACTURE OF SAWS.

The universal employment of iron and steel in all the most important branches of human industry, has rendered the manipulation of those materials a subject of vast importance, and one that is fraught with information and interest to all classes of society. Whether we regard with a feeling almost approaching to wonder and amazement, the gigantic cannon of our navy, the power of enormous engines, or curious metallurgical processes, the fact becomes apparent that enterprise and skilled labor afford wonderful exhibitions of their influence in advancing civilization. We see the grandest artificial sight under the sun when our manufactories and industrial works are presented to view, for there we see the ability of human intellect to control natural forces for its benefit, mind wielding matter at its will, man's enterprise and industry rewarded, and works truly admirable as the result of scientific labor and skill. To a sketch of one of the largest, and certainly one of the most prominent manufactories in the city of New York, as being the birth-place of the celebrated ten-cylinder printing press, we invite the attention of our readers. The machine works represented in the annexed engraving are extensive, well stocked with the best of tools, and are now being enlarged to double their present capacity. The number of hands employed averages four hundred, but of course a much larger number of mechanics, and a greater stock of tools will be needed upon the completion of the new buildings. The machinery chiefly manufactured here consists of all descriptions of hand and power-printing presses, copying presses, printers' materials, hydraulic presses, steam engines, saws, iron and brass castings, etc.





Our space will only allow us to allude more particularly to saws and their manufacture. The best English steel is the material employed, and upon entering the saw department, the visitor observes a great number of steel plates "in the rough;" some oblong, others circular, and both kinds of different thickness. Of saws, there are quite a variety; most of them are known as "splitting," "cross-cut," "mill," "pit," "buck," and "circular" saws, all used in different ways for cutting logs, boards and wood-work in general. All the steel plates, whether large or small, are carefully straightened, punched, hardened, ground and finished. Take, for example, the manufacture of a large circular saw, six feet in diameter, having the great modern improvement of fitted teeth, as represented in the adjoining illustration. The circular plate "in the rough" has first a small hole drilled through it in the centre; this allows the plate to be fastened on a spindle, stud, or bolt, during the successive stages of the work, and gives a good chance for handling so large a plate with ease. This plate is now placed in an horizontal position, and holes are drilled out at certain distances near the periphery, as introductory for the insertion of the teeth which are shown by the darkened portions of the second engraving. These holes are countersunk on both sides of the plate so that the circumferential edge, when finished, has a V form. The plates are then taken to a powerful punch and those parts cut away necessary for shaping the angular opening and giving the proper form to the teeth. They are then hardened in a composition bath, tempered, straightened and ground. The grinding machines are worthy of remark, but we will first state that the sides of circular saws are seldom made parallel, the thickest portion being at the centre and gradually decreasing in thickness towards the edge; the thickest part, however, is less than

the breadth of the tooth extremities, which of course allows the saw to "clear itself" when a board is being cut. In the grinding, the saw is placed at right angles to a revolving grindstone and gets motion by having its sides furthest from the grindstone, held between two small friction rollers, driven in their turn by a simple arrangement of spur-gearing. The saw traverses backwards and forwards with a varying or irregular speed, while at the same time the surface being ground is kept close up to the grindstone by means of a screw and handwheel, under the control of the operator. The irregular traverse is arranged to suit the tapered or slanting surfaces of the sides of the saw, and this is obtained by a segment of a scroll spur-wheel which gears into a pinion.

There were other novel arrangements on the grinding machines which space alone prevents us from noticing. The saws after being ground are polished, blocked and finished. The adjustable teeth are punched out and have their cutting extremities drawn out and spread by the blacksmith; the edges are grooved in a V figure by a machine having a small revolving milling cutter made of exact dimensions so that with the male and female A V, the teeth are easily slipped in and securely held by the openings as seen at A in the illustration, which will appear plain and comprehensive even to those not posted in saw making. We need scarcely add that the manufacture of saws is but one branch of business carried on by Messrs. R. HOE & Co., the proprietors of the works alluded to, as they have in addition to those located on Broome street, and which are ably superintended by Mr. S. D. TUCKER, other establishments on Gold street, N. Y., and an extensive house in South Boston, Mass.

Experiments in Fireproof Flooring.

A series of interesting fireproof experiments were recently made on the grounds about to be occupied by the new building now in course of erection for the Hoe Press Works at the corner of Broome and Sheriff streets. The experiments made were with a view of rendering the ordinary wood flooring impervious to the action of fire. The trial was made upon, and under a floor of about twelve feet square, raised about six feet by means of heavy posts being sunk into the ground. Upon these the square section of beams was placed. These beams were lathed underneath with strips of pine, set from one or two inches apart and placed so as to retain a ceiling of plaster of Paris spread under the beams to a quarter of an inch below the strips and one-half inch thick between the beams and above the strips. Upon the plaster was placed ten sheet iron tubes, the object being to enclose the bulk of the space between the beams. The remaining space between the tubes was then filled, and the upper side of the beams covered with the plaster of Paris. After allowing these sufficient time to set, the floor boards were fixed and the plaster allowed to harden. Under this floor was lighted a fire, which was allowed to burn for four and a half hours. The result of this experiment was very successful. The plaster had cracked somewhat, but the beams were not at all injured. The fire had scarcely blackened them, and no opening was made in the floor above. During the progress of the fire it was never so heated but that one could have stood almost barefooted on it without discomfort. In experimenting on a somewhat different description of flooring, which was secured against fire from the upper as well as the lower sides, the test was equally severe with the former trial. The protection in this instance was made against fire by fastening thin sheets of iron on the top of the beams and spreading a layer of plaster of Paris a quarter of an inch thick over the sheet iron before laying the wooden flooring. This floor was subjected to a test of six hours. For three hours a strong fire was kept burning under the floor, and the remaining three, the fire was kept burning on the surface of the floor itself. On examination of the floor after the experiment was made, it was found that little or no damage was done, and the floor was comparatively uninjured.

The New Mineral Cornwallite.

In continuation of his recent "*Researches on New and Rare Cornish Minerals*," Professor A. H. Church describes the mineral *Cornwallite*, and gives several analyses by which it is shown to consist of arseniate and hydrate of copper with a small proportion of phosphate. Neglecting the latter its formula may be written thus:—

$$Cu_3 2AsO_4, 2CuH_2O_2, aq.$$

Previous analyses make this mineral appear to have in all *five* atoms of combined water, but the author believes that the error in excess is accounted for by want of care in drying the samples previously to their chemical examination.

The formula of Cornwallite, thus amended, makes it stand in nearly the same relation to Erinite amongst the arseniates, as Ehlite stands to Dihydrite amongst the phosphates. This will appear by the following comparison:—

Cornwallite.....	$Cu_3 2AsO_4$	$2CuH_2O_2 aq.$
Erinite.....	$Cu_3 2AsO_4$	$2CuH_2O_2$
Ehlite.....	$Cu_3 2PO_4$	$2CuH_2O_2 aq.$
Dihydrite.....	$Cu_3 2PO_4$	CuH_2O_2

A Model Scientific Writer.

Professor Fraser says with regard to Sir David Brewster's great precision, energy, and determination of thought—that during the seven years that he (Professor Fraser) was editor of the *North British Review*, Sir David Brewster contributed an article to every number; and that he did far more—that he stated the day when his first slip of paper would come, and the day when it would be finished. His manuscripts came as they were written—day after day, and sheet after sheet—and without the necessity of the revisal of those preceding. He thus worked with the precision and regularity of a mechanical rather than a mental machine.—*Scientific Review.*

American Cast Iron

An English Engineer writes to the London *Engineering* from this city as follows: "The cast iron here astonishes me. I saw in the Brooklyn Navy Yard a cast-iron naval gun which had been hit by a Southern shot about 4 ft. from the muzzle, and the shot had left its mark, impressing the rifling quite clearly. There was not a crack upon the surface of the gun; but the dint was driven right through the thickness of the gun and reproduced in the chase, so that a close fitting shot could not be fired from it."

Practical Letters.

A DEPARTMENT FOR MINING ENGINEERS AND METALLURGISTS.

[WRITTEN FOR THE AMERICAN JOURNAL OF MINING.]

SKETCH OF THE SCRANTON COAL MINING DISTRICT—NO. I.

BY DAVID COGHLAN, M. E., SCRANTON, PA.

The Wyoming and Lackawanna basin is the most important of the anthracite regions, and of any of the coal fields of this country. This valley is unfortunately situated in the heart of the mountains, so that its naturally advantageous position for the supply of New York and other important centres of industry in the eastern States, is partly neutralized by this circumstance, though indeed, the Schuylkill and Lehigh districts suffer from the same difficulty. Its extreme length is about sixty, and its greatest breadth about four miles, extending from some fifteen miles below Wilkesbarre to ten above Carbondale. Scranton is situated in the middle, and here the coal-measures attain their maximum; besides this advantage, the coal is found at a smaller depth than in the southern part of the field. These circumstances, added to the greater proximity to New York, and its own great railway facilities, have given Scranton a pre-eminent position among the Pennsylvania coal-fields. The greater part of the coal in Scranton, is mined from two principal beds called "the big vein" and "Clark's vein." This erroneous term of "vein" for bed or seam, has probably been introduced from the pitching nature of the beds in the Schuylkill country where the coal was first worked, and where the dip is so great as to resemble that of metallic lodes. The "big vein" is only found in the central part of the basin, and even then, is often cut out by the valleys of denudation of the Lackawanna and other streams. The thickness is generally ten feet. It has been mostly worked out by drifts, owing to its small depth from the surface. Beneath this lies "Clark's," and many other minor beds. The average thickness of "Clark's vein" may be fixed at eight feet. In all the beds, subordinate layers of slate and bone occur, and on the less or greater quantity of these present, as well as on the sulphur, or rather pyrites, which is also injurious, depends the good or bad quality of the coal. In some parts of the bed, the whole thickness is composed of bad coal, and these barren parts extend longitudinally to a great distance, and may measure from one hundred to two hundred yards across. These are often so poor as to be left unworked, not paying for the cost of extraction. Doubtless they will guide some future inquirer in forming a satisfactory theory of the formation of the beds. May they not have been caused by currents of rivers or streams flowing into the shallow lake or swamp in which the vegetation which formed the seam grew, and by the mud deposited so adulterating the vegetable matter, as to form the poor coal at present existing? Fossil plants are found mostly on the roof-rock, immediately overlying the bed; never, I believe, in the coal itself. Sometimes the lower beds, not far above the conglomerate, attain a workable thickness; as, for instance, in the rolling mill mine of the Lackawanna iron and coal company, which averages five or six feet. As long as the main beds last, there is not much prospect of the minor ones being extensively worked, but they will form a great and useful reserve for the day, which cannot be very distant, when the principal seams shall have been worked out. There is an enormous drain on this district, for it may in fact be said to supply the main consumption of the Eastern States, and it is an interesting question to make a calculation of the time this deposit will last under the ever-increasing demand. This is, however, a thing which can only be done by a costly Government inquiry; and, even then, it must be at best but an approximate estimate. We see that even now the easily worked part of the Schuylkill region shows signs of exhaustion. A great element of waste here is owing to the great hardness of the coal, which necessitates crushing to make it suitable for household purposes, thus causing the production of dust and pea-coal which is almost useless, owing to the absence of bituminous matter, which, in the case of soft coal, causes caking by heat, and consequent utilization of the slack for fuel. Mountains of this substance exist near all the principal mines, and will probably, at some future day, be consolidated in blocks by machinery, when the extraction of the coal from the mines becomes more difficult. This valley would seem to have contained a lake at no very remote epoch, as vast beds of gravel and sand exist on the eastern side about Scranton, in many places projecting like promontories above the general surface of the valley. These ridges would seem to have been caused by rivers entering the lake at these points, the sand and gravel being deposited in layers, as they would be by running water. Bands of coal-sand also occur at intervals in these deposits. Shafts are more used than slopes in this district, owing to the generally slight dip of the beds. The universal system of mining the coal is by gangways driven from the bottom of the shaft on approximately parallel courses, at, say, from one to two hundred yards apart, chambers being turned off from these gangways diagonally on one side, while the air-way runs on the opposite one. These chambers are continued until they communicate with the air-way of the next gangway. The chambers are driven from 20 to 30 feet wide, and the intermediate pillars are left from 5 to 10 feet thick. No better proof can be given of the solid nature of the rock overlying the coal, than the fact, that even with such wide chambers under a flat roof the only timbering used is rough props, with the addition, in places, of the refuse stuff "gob" built up against the side of the chamber; and yet, few accidents occur from the falling of the roof. Had they the ordinary ground occurring in metalliferous mines, to deal with, the extraction would certainly cost double, from the additional cost of timbering, and difficulty and delay in working. The cars which extract the coal, containing about two tons of coal each, run along an iron track from near the face of each chamber along the gangway to the shaft, being drawn by mules, and from thence are hoisted on a safety cage to the top of the breaker, some sixty or seventy feet above the surface of the ground, in order thereby to have a sufficient elevation to allow of the screening and breaking to be performed in the descent to the cars which convey the coal to market. The simple nature of coal-mining requires less engineering than any other kind of mine-work. The principal thing necessary is to so arrange the shaft or slope that it may reach the lowest point of the basin, within the limits of the property worked, so as to avoid dip-workings. In metalliferous mines, should the works be carried on through ignorance, in an unpromising part of the lode, or so as to reach old workings, in which of course there is no prospect of a new discovery of ore, or again, should cross-cuts or adits be made in a wrong direction to cut a vein, the back of which may not show at the surface, the money so spent is totally lost, hence the great importance of having a competent person to superintend the underground operations. But in coal mines errors of judgment in opening new works, in the seam at least, are not of consequence, as the coal extracted pays for them, all parts of the bed being, with trifling exceptions, of equal value. Again, in sinking a shaft, no great nicety is required, as the bed is sure to be struck at any point within the basin, between its two outcrops, and slopes are sunk on the coal itself. The consequence is, that the mines are under the superintendence of working men, and but few mining engineers are employed in the coal districts.

[TO BE CONTINUED.]

[WRITTEN FOR THE AMERICAN JOURNAL OF MINING.]

The Relative Economy of Some of the Machines Used in the Ventilation of Mines.

BY R. P. ROTHWELL, M. E., WILKESBARRE, PA.

The opinions advanced by your contributor, Mr. Harden, as to the relative efficiency of the various means employed "to assist ventilation" in mines, are somewhat behind the present practice of mining engineers. It may not prove uninteresting to some of your readers to see a comparison made of the results obtained in actual practice by the different ventilation agents, and it will, at the same time, enable us to judge of the relative value, as a means of permanent ventilation, of the steam-jet, the furnace, the fan, and the air-pump. The first of these is minutely described and much praised in the articles on ventilation referred to, while the fan is introduced as "not producing, in any instance, results to be compared with those of the furnace," and the air-pump is dismissed as not even meriting a description.

In order to compare the value of these machines, we must reduce the effective work done by each to a common unit of measurement; we shall adopt the burning of one pound of coal per minute, which under well constructed boilers, develops a useful effect equal to 8½ horse power. The amount of air put in motion is not of itself any criterion of the effectiveness of the ventilating machine, since the work done is a function of the resistance or "drag" under which the current is circulated, as well as of its volume; in fact we have examples of enormous quantities of air being circulated through mines by natural ventilation alone; thus at the Tyne Main Colliery (648 feet deep, and 50 square feet area of upcut), with a difference of temperature of 18 degrees between the downcast and upcast, as much as 37,000 cubic feet per minute were circulated at a drag of 0.2 inches of water, or 1 pound per square foot. At the Seaham Colliery, on the coast of Northumberland, 70,000 cubic feet per minute passed through the pits, which were 14 feet in diameter, though the difference of temperature, we are told, was only about 8 degrees, while in the well known Hetton Colliery, where the upcast is 900 feet deep, with an area of 153 square feet, the enormous amount of from 100,000 to 127,000 cubic feet of air per minute was circulated, at a drag of 0.55 inches, or 2¾ pounds per square foot, or an effective work done equal to 11 horse power. This already very large volume of air was increased to the unprecedented amount of 208,500 cubic feet per minute, at a drag of 6 pounds per square foot, by the consumption of 18.86 pounds of coal per minute in three furnaces; deducting the work due to natural ventilation, this would give a useful effect of 1.5 horse power per pound of coal consumed per minute, or only 17½ per cent of that obtained by the consumption of the same quantity of coal under good steam boilers. Yet this is an exceptionally favorable case, due principally to the large section of the shafts and air-courses, and the depth and condition of the upcast shaft. Another very favorable case of furnace ventilation was that at the Tyne Main Colliery, where, by the consumption of 16¾ pounds of coal per minute, the volume of air circulated was increased from 35,000 to 102,000 cubic feet per minute, the drag increasing from 1 pound to 4.6 pounds per square foot; which result is equivalent to a useful effect of 0.81 horse power per pound of coal consumed per minute, or only 9½ per cent of that obtained with steam boilers. These examples of furnace ventilation, selected as among the most favorable on record, show not only the enormous volumes of air which may be circulated by this means, but also demonstrate what an enormously expensive ventilating power the furnace is, even under the most favorable circumstances. Let us now compare these results with those obtained by the use of the steam-jet in these same collieries.

At the Hetton colliery, which is the most favorable example on record of steam-jet, as it is of furnace ventilation, we find 37 jets of ¼ inch diameter, with steam at 40 lbs. pressure, (the boilers consuming 25¼ lbs. of coal per minute) giving a current o

160,000 cubic feet per minute at a drag of 4.15 lbs. per square foot, which would be equivalent to a useful effect of 20.1 horse-power. Deducting from this 11 horse power, as due to natural ventilation, and we obtain as the useful work done by the steam jets 0.36 horse-power per lb. of coal burned per minute; that is, one-fourth the economy of the furnace, or but little over 4 per cent. of that obtained by using the same steam in an engine. The results obtained at the Tyne Main Colliery were still less favorable; there, sixty-one 3-16 inch jets used the steam from two boilers, burning 20.48 lbs. of coal per minute, and produced 50,000 cubic feet of air per minute, at a drag of 2 lbs. per square foot; the work done by natural ventilation alone being 1.1 horse-power. The following comparison shows the result of the experiments: Steam jet alone, one lb. of coal consumed per minute, produced 0.098 horse-power. Furnace alone, one lb. of coal consumed per minute, produced 0.81 of useful effect. Steam jet and furnace together, one lb. of coal consumed per minute, 0.428.

These results show that with an expenditure of 109 horse-power, the steam-jet gives a useful effect equal to *two* horse-power, or less than 2 per cent of what would have been obtained by using the same amount of steam in an engine; it is, therefore, about eight times less economical than the furnace. It is unquestionably the most expensive ventilating power which has ever been adopted for procuring a permanent ventilation—we say permanent, because as a temporary expedient, in cases to which we shall presently refer, it may be applied with advantage, the question of cost being there of secondary importance.

Let us now examine the results obtained in practice with the fan and air-pump, so lightly passed over by your correspondent. The centrifugal ventilator, or fan, is much liked on account of its extreme simplicity and small cost, but it has the inconvenience of working at a very high velocity, thereby producing much leakage and friction of the air current. The straight-vaned fans which were in use in the German mines more than 300 years ago, and are described and illustrated by Agricola, are still to be met with, though they have generally given place to the better form of curved vanes, or vanes, inclined at an angle of 110 to 150 degrees with the radius; the theoretical angle is 150 degrees, but in practice it is found, in general, better to use an angle between 120 and 130 degrees. When well made and of such a diameter that the air can have free ingress and egress, and so that the velocity does not exceed 200 or 300 revolutions per minute, these fans give very good results; they are much used in Belgium, where experiments made on those known as Guibal's, at Grenay, near Bethune, and at Monteeau-Fontaine, near Charleroi, have shown a useful effect equal to from 40 to 50 per cent of the power developed in the steam cylinder and from 60 to 74 per cent. of the force transmitted to the axle. The diameters of Guibal's fans, as used in Belgium, vary from 20 to 28 feet, and they are from to 6 to 10 feet wide.

At Agrappe, experiments made with one of these plane-vaned fans—very similar in construction to those in use here—with a diameter of 10 feet, 9 inches or 3.30 metres, diameter of side openings, 5 feet, 3 inches, and working at a velocity of 192 revolutions per minute, showed a ventilating current of 30,000 cubic feet per minute, circulated at a drag of nearly 12½ lbs. per square foot. The useful effect was 74 per cent. of that developed by the steam in the cylinder.

A number of these ventilators are now in use in the English mines, near Newcastle, and are giving great satisfaction. Several are at present being built, showing that they are growing rapidly in favor; and in fact what furnace has ever given results to be compared with these in economy?

[TO BE CONTINUED.]

Mining Summary.

GOLD AND SILVER.

Nevada.

Pahranagat.—Ostrom's mill at Austin is reported by a person from this district, May 1, to have commenced working about the middle of April. He represents it as doing satisfactorily and turning out considerable bullion. The ore which has been reduced was from the mines of the company owning the mill, and though of fair quality, is not of a high grade. He says the List lode of the Alameda company is yielding some very rich ore, and is being vigorously opened.

Washoe.—The *Slope* says of the mining prospect of this country: "For some months past a considerable number of miners have been at work in what was formerly known as the Argentine district, located in the hills east of Washoe lake; these men have been thus far very reticent, but we gather from various sources, reputed to be reliable, that they have met with such encouragement as justifies them in the opinion that there is a large amount of ore in that district that will pay well for milling at the present tariff of prices taxed by mills in this valley. Should their expectations be met, the working of these mines will add largely to the business and material prosperity of Washoe county; affording a supply of ore during winter months to mills that now stand idle during several months of each year, and in the event of the completion of the railroad, ensure the erection of several new mills in this valley.....The Gold Hill *News*, April 7, also remarks the increasing tendency prevailing to develope some of the really promising ledges in its section, outside of the regular Comstock. It says: "The old St. John mine, situated north of the Occidental, has already yielded about 2,000 tons of paying ore, which was crushed at the Birdsall mill near Dayton, and durnig the coming summer will doubtless be vigorously worked. It is probably the same lead as that upon which the Occidental mine is locaetd. Several companies are opening mines in the vicinity of the two claims named, and we look for some valuable discoveries before next fall. The success of the Lady Bryan company has also incited many to resume work upon claims in Flower district that have long lain idle. The working of the mines of Palmyra district, which was interrupted by the heavy snow of last winter will be recommenced shortly, and we confidently anticipate excellent results therefrom during the coming season."..... Speaking of the Occidental mine, which consists of 1,800 feet on the Occidental lead, and is situated on the Leet and Birdsall toll road, leading from Virginia to Dayton, the *Enterprise* says: "Gypsum predominates in the ledge matter. The average width of the ledge between walls is about thirty feet, and the average width of the pay-streak is fully eight feet—in many places ten or twelve feet. The lead is favorably situated for the cheap extraction of the ore. A tunnel 600 feet in length has been driven in just above the road named, which cuts the vein at a depth of 600 feet below the croppings, or, in other words, gives 600 feet of backs. This tunnel will soon be extended 400 feet in the direction of the summit of the hill, when its depth will be 960 feet below the croppings. Northward of the present works, toward the summit of the hill, the owners have 800 feet of ground that has never been touched, and the ore appears to improve as the vein is followed in that direction. At the point where the workmen are now engaged, the lead has been worked from the tunnel up to the surface—about 600 feet—the ledge lying an at angle of about 45 degrees, and to the width of from 40 to 200 feet. Here and there pillars of ore have been left to support the roof, but, in places, vast chambers 200 feet in length, 20 feet in height, and from 50 to 80 feet in width, are without any support whatever. Owing to the solidity of the rock and the dryness of the mine, it never caves, and is worked almost without timbers—in fact, there are no timbers in the mine as supports. Deep as the mine is, there is not a drop of water, or even a moist spot in any part of it; it is as dry as a powder-house throughout, and perfectly well ventilated, owing to the connection between the tunnel and the surface at the point where the lead is now being worked. A heavy clay wall on the east side of the lead effectually shuts out all the surface water. Near the end of the tunnel an incline has been sunk to a distance of 100 feet on the lead, below the present working level, and at that depth the mine was found to be as dry as above. At the bottom of this incline a cross cut was made, and the lead ascertained to be 35 in width between walls. An assay of average ore, taken out in making this cross-cut, shows it to be worth $22. The owners of the mine are working in all—miners, teamsters, blacksmiths, etc.—twenty men, and take out on an average, thirty-five tons of ore per day, which is hauled to their mill, four miles below, by their own teams, three in number. The mill contains but fifteen stamps, and these light, weighing but from five to six hundred pounds each; however, about twenty-four tons of ore are crushed every day. Ore is being delivered at the present time faster than it can be crushed, and some two hundred tons have accumulated at the mill. The owners need a much larger mill. Mr. Wm. Moyle, the superintendent of the mine, is one of the best miners we have seen in the country, and may be said to have made the mine what it is at present. Since he took charge of the mine, twenty-two months since, it has yielded $300,000."

Reese River.—The *Reveille*, of the 2d inst., is given to understand that there is very little probability of the Keystone reduction works being rebuilt. "The money to be paid by the insurance companies for damage done by the fire, would be sufficient to pay the cost of rebuilding, but out of this amount there is a considerable sum due John A. Paxton & Co., as a debt on the property, which will require to be paid."..... The shaft of the Toiyabe company which is being put down for the Audabon ledge, lying between the Revenue and Buel North Star mines, is now down 95 feet. The site for the hoisting works, about to be erected, is partially graded, and active preparations are being made for vigorous prosecution of the work....." We had the pleasure yesterday afternoon (says the *Reveille* of the 1st inst.) of examining a very fine lot of 25 to 30 tons of assorted ore at the Timoke mine. Mr. Fuller, under whose able superintendence the practical mining operations are conducted, thinks it will give a mill assay of about $300 to the ton. The most of it is a rich heavy ruby mineral, and many remarkably fine cabinet specimens could be selected from the pile. The incline is now down 400 feet. There has been a slight break in the vein, but it is now about past, and a very rich streak of ore is coming in. The last mill-working from the mine made three weeks ago amounted to 37 tons, 817 pounds; of this the average pulp assay was $309 per ton. After the cost of milling was deducted, the amount received by the company was $7,997 63 in coin, being at the rate of $256 92 per ton actual bullion yield. Out of this sum a monthly dividend of 5 per cent. on the capital stock was remitted to the office of the company in Boston, and a similar dividend for May is now in readiness. This is the best kind of testimony which can be offered as proof of the value of a mine."

Reveille.—The *Reporter*, April 18, says: "This district may become the scene of great activity during the summer. A private letter, just received from there, informs us that the agent of an eastern company is now there, who will either refit the Rutland mill, and again start that, or build an entirely new ten-stamp mill. We hear also that certain negotiations are pending between some of the oldest locators of claims there and a New York company, which renders it probable that a considerable ground will shortly change hands, in which event a first-class mill will be commenced next fall.

Palmetto and Silver Peak.—"From W. S. Arnold, recently from Palmetto district, we learn (says the *Reporter*, April 18) that considerable progress is now making in that section—Palmetto and Silver Peak districts. At the first named place, Col. Catherwood, agent of the New York and Silver Peak company, has a force at work upon the Champion ledge, still sinking upon the incline, while additional workmen are running levels and stoping out ore by contract. The deepest point reached upon the Champion, at the time Mr. Arnold left there, was 310 feet, at which depth the ledge carried a stratum of excellent ore about five feet wide. The Colonel intends, immediately, to commence the erection of a twelve-stamp mill in the district—Mr. Arnold having, as he informs us, contracted to put it up. It will have an engine and boiler capacity sufficiently powerful to drive twenty stamps and the requisite number of pans for amalgamation. Several other companies are preparing for operations at an early day. At Silver Peak about a dozen men are employed upon the large mill of the Red Mountain and Silver Peak company, which will soon be in operation. The same company also have about fifty men employed in grading a wagon road from the mill to the tramway leading to the foot of the mountain from the Crowning Glory mine, whence they expect to receive a supply of ore for the mill. While coming up, Mr. Arnold passed the teams loaded with the three-stamp mill of Antoine Borgues, recently purchased by him at Red Mountain, and which he intends to re-erect at this place. The mines to the southward, on the Inyo mountains, are attracting an unusual degree of attention."

Morey.—This district lies 85 miles southeast of Austin. Mr. L. A. Curtis, just from there, gives some interesting notes on the mines, which the *Revetile* prints as follows: "The incline on the American Eagle ledge is down 90 feet. About 50 feet from the surface, one drift has been run to the west 200, and another to the east 100 feet. This vein is said to be very well defined, the walls being smooth and hard. The pay-streak is sometimes not more than ten inches thick, then it widens out to four feet. As proved by several lots of 20 to 30 tons each, worked last fall at the Old Dominion mill at Hot Creek, the ore gives an assay of $180 to $220 per ton. Except in picking out clay and bed rock, the ore was not assorted, as it contained very little barren quartz. The Magnolia lode is opened to the depth of 85 feet, with drifts 20 feet each way along its course. This ledge is from twenty inches to three feet thick, and yields a grade of ore ranging from $170 to $260 per ton. There have also been several crushings of ore from this claim, so that its value has been proven. An assay of the dust taken from a two-foot drill-hole in the ore at the bottom of the incline, gave the large return of $1,020 to the ton. In the district there is about 75 tons of ore extracted, which will give as good a mill-working as any of the previous batches reduced, but as the nearest reduction works are 50 miles off, nothing can be done with it at present. Morey is well provided with mining timbers and firewood, the hills around being thickly covered with nut pine of large size. There is sufficient water, too, for extensive milling operations."

White Pine.—The Austin *Reveille* of March 30th contains the following: Specimens of singular looking ore were brought into the city to-day from the White Pine district and deposited at the office of Boalt & Stetefeldt for assaying. It was most unlikely stuff to yield silver, and appeared to be mere breccia of quartz and slate. Of two specimens assayed the yield was as follows: No. 1, $1,737 75; No. 2, $657 09. The ore was obtained from the Hidden Treasure ledge, which develops immense masses of it. It is imbedded between slate and limestone, and it had been cut through 15 feet without reaching the upper wall. Miners on the ground pronounced the queer stuff worthless, and several bets were made that it contained only very little silver. The large buttons produced from half ounces of the pulp astonished even the assayers.....The same paper, May 2, says: If all we hear is to be believed, the Hidden Treasure ledge, in the eastern part of White Pine district, about a hundred miles east of this city, is likely to become one of the greatest mines of the country. We must make allowances, of course, for interested parties seeing the ledge in a more enchanting light than a prosaic, practical, uninterested world can be expected to behold it. We have reason to know, however, from outside parties, that the mine is certainly of great value, and shows even now a large amount of rich ore. From Thomas J. Murphy, who owns, by purchase, a controlling interest in the property, we learn that the lode is twenty feet wide, all of high grade milling ore. An open cut some fourteen feet deep is being run along the vein, which shews a uniform quality of mineral wherever it has been worked upon. Mr. Murphy says he is about to take out twenty fresh miners, and he has just contracted with Mr. J. W. Bailey, agent of the Centenary Company for the reduction at the Newark mill of 1,000 tons of ore. A small lot of bullion yielded by a trial working of ore in the five-stamp mill at White Pine, is expected to arrive in the city this evening. A load of 3,142 pounds of ore from the claim worked last week at the Manhattan mill, and reported in our pages, gave a pulp assay of $671 13 to the ton. It may therefore be conceded that the Hidden Treasure is about to become one of our standard mines.

Humboldt.—The Unionville *Register*, April 18, says: "The Pioneer Mill commenced crushing rock from the Arizona mine again this week. The mill has been run on tailings for the last three months, the condition of the road being such that no ore could be hauled from the mine. From this time on, the bullion shipment from the mill will be largely increased, as the supply of ore is abundant and the quality excellent. The new mill for this company is going up rapidly, and will be in running order by the first of June. The number of men at work on the mine will soon be largely increased, and ore taken out in quantities sufficient to keep the mills running.....The same paper, of date the 25th ult., says: At the De Soto mine work has been resumed, under the supervision of Mr. James Hendra. About the only obstacle the company has to contend with is the lack of a mill to do their crushing. There is enough ore exposed in the mine to justify its owners in erecting reduction works. When the company does so, it will be able to make clear money, but so long as it costs $70 per ton for milling—to say nothing about the stealings—it need not expect to make much headway.....Fall's Mill shipped this week 2,200 ounces of fine bullion.

Cortez.—The *Reveille*, of the 8th inst., notices the arrival for reduction at the Manhattan Mill, Austin, of a quantity of ore weighing 9,753 pounds from the St. Louis mine. It will, it is estimated, yield several hundred dollars per ton.

Washington.—"The agent of the Utica and Herkimer Company," the *Reveille* is informed, "is actively engaged in pushing forward the work on the 15-stamp mill now being built in San Pedro canyon. There are some excellent mines in Washington district, but, it continues, as in other sections they can only be opened by the expenditure of considerable money. We trust there will be no further injury done to the name of our mines by a mill being built without a supply of ore to keep it steadily at work being first made sure of. It is a good mine well opened that a company ought to be desirous of securing rather than a quartz mill standing idle nine-tenths of the time. In practice it is found a very difficult matter to secure daily 10 to 12 tons of good milling ore, and it is only after mines are tolerably well developed that such a supply can be depended on."

Flowery.—"We understand (says the Virginia *Enterprise* of April 18) that work will shortly be resumed on the well-known Rogers' mine, situated in Flowery District. Some two or three years ago it was profitably worked, when the cost of reducing ores was much greater than at present, but not having proper machinery for hoisting and draining, work on the vein was discontinued. It is the intention of the owners to erect hoisting and pumping machinery, and open the mine in good shape. They have an immense amount of ore at the surface that will pay from $18 to $20 per ton, and a very considerable streak that will mill from $27 to $30. In the deepest working of the mine is a vast deposit of ore that is very rich in silver, but which at the same time contains so much galena and other base metals that it cannot be worked by mill process without great loss. A lot of this ore—which yielded at the rate of several hundred dollars per ton by fire assay—produced but $40 per ton when worked by the common mill process. The company intend taking out a quantity of this ore and sending it to San Francisco to be tested by smelting in some one of the furnaces in operation there. In case good results are obtained by smelting, furnaces will be erected near the mine. The croppings of the lead very closely resemble those of the Lady Bryan mine, and will probably prove equally valuable to the owners."

Montana.

We have papers to May 2. From the *Post* we learn as follows: A new method of placer mining has been inaugurated near Virginia City. On one of the bars several of the owners of claims are now engaged in going over their ground carefully with a pick, to the depth of ten or twelve inches, throwing the stone one side whenever encountered, and then shoveling the dirt into long winrows, which, when completed as they wish, is washed out and another winrow formed, the width of gravel thrown into each being about a rod. In this way from six to eight dollars a day to the hand is realized, the few inches taken from the top being the best of the ground, though one of the owners informed us that they had sunk a shaft through gravel which had prospected well, and, could a dump be obtained, it might be worked with a hydraulic to that depth with good profit. Just think of our mines being exhausted, with hundreds of acres of ground yet to be washed to a depth of from fifty to one hundred feet, and the time will come in a few years when it can be done, with the gulch worked out, and a dump thus furnished. .....Messrs. Taylor, Thompson & Co. have started up their steam placer mining institution, on claim No. 5, below discovery on Last Chance, and yesterday cleaned up $300 for a portion of a day's run. This is a decidedly new idea in placer mining in this country, and as it is a complete success, economical and not primarily very expensive, it will doubtless be adopted in many mining localities where there are rich, deep diggings, and scarce any fall or dump ground. The pay dirt is elevated some fifty or sixty feet from the pit by cars drawn up two incline railways by steam power, where it is emptied into the sluices, and the whole neighborhood can be used for dumping. The entire cost of machinery, trestle work, cars, &c., do not cost one-fourth as much as was paid for "wheeling" last season. This is what is wanted in Alder gulch to coax out its hidden wealth.....A party consisting of Messrs. C. Weary, J. R. Boyce, Sen., P. A. Largely, J. M. Castner, J. Cotner, and Judge Hosmer, starts for Argenta to take a look at the silver mines in that vicinity. Some of the above named gentlemen, who own property in Rattlesnake district, will, before their return, make arrangements for the speedy development of some one lode upon which they are interested, probably the Anaconda, which is spoken of very highly by those whose who have seen it. They will be gone about a week, and during their absence intend to thoroughly examine the different ledges near Argenta, and satisfy themselves of the value of the ore.....S. F. Molitor & Bro. cast yesterday, a gold bar of the coin, of the value of $3,587 64, from a six day's run

of J. C. Ricker's mill, on second-class rock taken from the I. X. L. Co's claim, on the Union lode. Mr. Ricker has been very successful in opening up this claim, and is down on the incline now to the depth of some three hundred feet, with a fine, wide vein, and showing very promisingly for future operations.....From Summit we learn that the John How tunnel is progressing rapidly, it is already in three hundred and sixty feet, and will, it is expected, tap the ledge in about forty-five feet more, at a depth from the surface of from two to two hundred and fifty feet. The shaft upon the ledge is about eighty or ninety feet deep and has, at the bottom, a well-defined crevice of rich rock, about four feet in thickness. One month more, it is thought, will open the ledge from the bottom, giving the greatest possible convenience for working. The Messler tunnel, on the Butler lode, has been run in about three hundred and fifty feet, and the workmen are now drifting on the crevice, following a very rich streak some twelve inches in width, which forms an extensive a portion of the main crevice, which is about three or four feet in width. The tunnel pierced the ledge at a depth of one hundred and fifty feet. Workmen are busily engaged at work on the Keystone, and have already taken out three or four hundred tons of fine looking ore, some of which runs from sixty to seventy-five dollars per ton.... The result of the last run of Nowlan & Plaisted's mill, at Cable City, is a bar made and assayed by Messrs. Molitor Bro's, of Helena—weight 408 79.100 oz., fineness 930½, value $7,863.....The Sensenderfer mill made a weekly clean up which was run into a brick weighing 267 46 ounces, and of the coin value of $4,011 27.....An arastra is being put up on the Brannon lode, at Mill creek. The ledge has a shaft about eighty feet deep upon it, and a crevice of four feet. The owners have out, ready for working, about one hundred tons of fine rock.....Two new discoveries of quartz have been made lately in Brown's Gulch district. One ledge has been named the Gould & Curry; the other the Shepherd & Christenot, after the discoverers. The specimens of the rock shown us are very fine, and the crevice of the former is about seventeen feet and the latter a few feet less. The owners are engaged in developing them and getting out rock, which will be crushed at Christenot's arastras, as soon as they start up, which will be in a short time.... Charles Cullen, Esq., from French bar, reports mining operations at a stand still. As in nearly every mining camp in the Territory, the general cause of complaint is the scarcity of water, it is to be hoped that the fickle gentleman, the "clerk of the weather," who is supposed to reign somewhere in the upper regions, will condescend to favor us thirsty mortals with a little of his rain in this section ere long. Gulch mining will be entirely suspended if this dry season continues much longer.....Dry gulch opened up very promisingly early in the season, and some large runs were made on the left hand fork—in one instance one hundred and eight dollars being cleaned up as the result of one day's work for two men, but water has recently failed and little can be done at present, as the supply will only allow of washing from two to five hours a day, and a good deal of dirt of last winter's drifting is yet unwashed, besides many good surface claims which pay well, some of them being very rich..... A correspondent writes from Bannack, Beaverhead county, April 18. Bannack is the centre of mining and mercantile enterprises for the county. There are now ten men mining in this camp to one any previous year since 1863, and the huge piles of pay dirt that stretch along the gulch, waiting for water, show the miners have been industriously at work; and there is not one who will not be well paid for his winter's work. Some, indeed, will realize what miners call a "home stake," and some will realize a handsome fortune. The bars and gulches have been thoroughly prospected, and in nine cases out of ten the miners have been richly rewarded for their enterprise. The Bannack Ditch and Mining Company made thirty miles of new ditches last summer, which are now nearly completed, intended to furnish more water for hydraulic purposes and to cover about five miles of dry gulches which have only been worked about one month each season with rockers. Men have made from $3 to $25 per day in these gulches. This company will employ forty or fifty men, and will doubtless reap a golden harvest this season. The Pioneer Ditch and Mining Company is a new company composed entirely of hard working miners, who constructed a new ditch last fall, five miles in length, to mine the hills and gulches north of Bannack. There are good indications that they will be well rewarded for their untiring perseverance. Having done all the labor themselves, they will reap the benefit. P. White & Co. commenced last fall to dig a ditch down the cañon to White Bar, which is now about ready for the water. This ditch has been made by miners, and covers some very rich ground. Another company of miners worked all winter, night and day, on a drain ditch in the bed of Grasshopper, which probably will not be in operation before next winter; but it is now proven beyond a doubt that the bed of the creek is very rich in the precious metal for several miles, and energy and determination will bring it to light. There are in all eight ditches bringing water into this camp for mining purposes, and they will be used this season to their utmost capacity. N. E. Wood, Superintendent of the New Jersey Gold and Silver Mining Company, is still running successfully his mill, known as Bullock's Crusher. He is working only one pan, not having sufficient power to work more pans. He is crushing quartz from the Cherokee, and is cleaning up weekly from $1,000 to $2,000. To him the country owes a debt of gratitude. The Montana Mineral Land & Mining Company's twenty-four stamp mill is running on quartz from the discovery of the famous Dakota lead, and there can be no doubt of the successful result, if the mill will save only fifty per cent., and it is believed that it will do better than that. Mr. H. Clark is Superintendent of this company, and has always been successful in mining. Messrs. Derier and Falls are putting up a furnace on the plan of Mr. Eslet's, to smelt the silver ores of the Blue Wing District. Messrs. Robinson and Wright are taking out tons upon tons of rich ore from the Silver Rose. Mr. Falls has also out a large amount of rich ore from one of the Blue Wing leads. When resolved to do and not to wait or depend on others, something tangible will be accomplished, and the time is not far distant when a few more miners can, by combining, build furnaces and smelt their own ores. Mr. Esler, of Argenta, proved the fact beyond a doubt that smelting works of good capacity can be put up for four or five thousand dollars; and, although he has been cramped financially, having undertaken so much without any capital, yet it is proved that his operations pay well, and must be pronounced a success, and a big stride in the right direction. Other furnaces will be erected at Argenta this season, and we will yet hear of great things from Argenta. Her mines are extensive and rich. Mr. H. F. Wood is quietly constructing a small experimenting furnace in his cabin, which, if it proves a success, and it is perfectly reasonable, will still be another grand advancement for the public good. A correspondent writes from Phillipsburg, April 15th: "The James Stuart mill started on the 26th of March, crushing Dashaway rock, and cleaned up with good results. It is now crushing rock from the Van Timmons lode, which is expected to exceed anything ever worked in the mill. After that they will crush sixteen tons of ore from the Ophir lode, prospecting equally good. Work is progressing on several leads—the Camanche in five different places. The Pride of Montana has a tunnel in 80 feet, with good indications. Shafts are being sunk on nearly all the ledges in the camp. Our town is lively and pleasant—streets dry and dusty.....The *Democrat* says: Mr. Nowlan, of Helena, telegraphed to his partner, Mr. Weary, of this city, that he (Nowlan) had received four hundred and eighteen ounces of gold from the "Atlantic Cable" lode, in Deer Ledge county, the proceeds of two weeks' run, valued at $10,350, currency, crushed at Nowlan & Plaisted's mill.....There are now at the bank of Hershfeld & Co., of this city, two handsome retorts of fine gold, weighing forty-three ounces, taken out of the "Cherokee" lode at Bannack, the property of Col. Wood; also, at the bank of Nowlan & Weary, one hundred and nine ounces of gold taken from the "Dakota No. 9," and crushed at the mill of Clark & Kirby. This gold is said to be 945 fine.....The Deer Lodge City *Independent* says: Mr. E. B. Johnson returned during the week from Helena, whither he had been to perfect arrangements to have a mill put on the W. L. Thomas' lode, at Cable City. We are happy to announce that arrangements have been perfected with Messrs. Hersfeld & Hanaur, responsible bankers, to put up a 15-stamp gold mill within ninety days. The mill will be located just above town, below the ledge.....The Helena *Herald* notices the last casting at F. Bohn & Co.'s assay office with great glee. It was a massive "adobe" brick of very fine placer gold, weighing 1,007 ounces and 89.100 lbs., 992 fine, and worth in coin just $18,793 11, or between $25,000 and $26-, 000 in greenbacks.

North Carolina.

A correspondent of the *Evening Post*, writing of the Southern gold mines from Greensboro', N. C., May 5, says: In the neighborhood of Dahlonega, Georgia, several gold mines are now worked successfully. In Augusta I lately met a large party of miners on their way to gold mines near Athens, in the same State. In South Carolina a few mines have been bought, and will be worked by Northern capitalists. In North Carolina there is more activity than elsewhere. In the vicinity of Charlotte alone twenty mines have been purchased within a year or two, and are now worked. Miners and capitalists are visiting the country almost daily, and mining property, which for years has been almost worthless, is in demand. It is probable that these mines will become much more profitable than ever before, for although they have long been worked, they were only half known to those who worked them. The mining has been of the rudest kind, no attempts having been made to work below the water level, and the apparatus for crushing the quartz and amalgamating the ore having been inferior. Years of experience seem to have taught the native miners very little concerning the difference in the formations which attend only isolated deposits of gold. Costly preparations were made for working mines which had been exhausted, and the limited extent of which a skilful California miner would have suspected at his first examination.

THE NORTH CAROLINA MINES.

Nearly all the gold mines in North Carolina are in the counties adjoining the line of railroad which runs from Danville to Charlotte, and they are most numerous in the neighborhood of Charlotte, where there has been for many years a branch United States mint. Here the surface is almost universally a heavy, dull red clay, overlying primitive rocks—ferruginous sand, gneiss, mica, or talcose slate, with some green stone and basalt. Small quantities of gold are found in the veins of quartz which traverse these rocks, and in the veins tracing the more recent primitive rocks it is found in considerable quantities. The country, especially in Mecklenburg county, is full of mines which have been worked to the water level. Almost every farm has one. You find everywhere old shafts and heaps of debris. These mines are held at a price not much greater than that of other agricultural lands. So many purchases have been made within a year, that mining properties—rather plantations with mines on them—have advanced in price by about one-fourth. Meanwhile those who have purchased refuse to sell again. Without exception the purchasers are capitalists from abroad, who have the power and the intention to develop the capacities of their mines. Their superintendants are practical miners, who have had experience in California and Nevada. They have made their investigations carefully and skilfully, and they report the result very plainly and distinctly. The mines, they say, are as rich as most of those in the Rocky Mountains. The quartz yields from fifteen to one hundred dollars per ton. The gold is often found in deposits of iron and copper pyrites, and is not always easily amalgamated, but is usually of remarkable fineness. But the great advantage of these mines is the cheapness with which they can be worked. "One dollar in currency here will do as much as five dollars in gold in Nevada," said a miner who had worked successfully in the latter country. "Quartz yielding ten dollars a ton is worth as much here as quartz yielding fifty dollars a ton in California," was the statement of another experienced miner. Supplies are abundant and cheap. More than $13,000,000 have been taken from the mines of North Carolina since their discovery. The reports of the mint at Charlotte show about half a million dollars' worth of gold was assayed there from October, 1857, to May, 1861, when it closed; and this when the mines were comparatively deserted. As yet but three or four mines in the vicinity are provided with crushing and amalgamating machinery; but all of these are doing exceedingly well. I could hear of no instance where a mine has been well managed and worked with approved machinery, which has not been successful. To provide for the increasing production of gold, the United States Mint at Charlotte has lately been opened for assaying. One of the richest mines in the State is at Gold Hill, a few miles southeast of Concord, and northeast of Charlotte. There are a few mines in the neighborhood of Latisburg, and fewer still about Greensboro, which are now worked. There are also isolated mines further east and further west, but so far as discovered the mines are richest and most numerous in a belt of country about thirty miles wide, extending diagonally across the State from Danville to Charlotte, in a course parallel to the mountain ranges, a hundred miles further west, and to the seacoast, two hundred miles further east. The exact nature of these mines must be very soon demonstrated. A score or two of companies working with skilled miners and the best machinery will find gold if it is to be found. If the anticipations of the miners are realized, these North Carolina gold fields must immediately become one of the most important resources of the State, and plantations now unsalable at ten dollars an acre will bring fortunes to their owners. So far there is no indication of a speculative feeling.

West Virginia.

The Pomeroy *Banner* says: We had the pleasure of visiting the silver mines of Jackson county, West Virginia, on the 18th inst. We have no disposition or interest in misrepresenting the condition of affairs in that locality, and we shall, therefore, content ourselves with giving a simple history of the silver excitement in Jackson county, West Virginia. Shortly after the war, two young gentlemen by the name of Cunningham, while boring for oil, struck a substance of a bright, argent appearance, which at first attracted but little attention. They, however, saved some of the material, and sent it to the city and had it analyzed by competent chemists, who pronounced it to be silver of a very fine quality. This created some considerable excitement, which induced other companies to prospect for the metal. In less than one year fifteen companies had sunk holes to the depth which the metal was represented to be, and fourteen out of the fifteen obtained the precious metal. Thus encouraged, two companies, viz: The Pittsburgh Mining and Developing Company, and the Pomeroy Company, undertook the herculean task of sinking shafts six by twelve feet to the depth of three hundred and ninety feet. These companies have patiently labored for near a year in driving these shafts. The Pomeroy Company have descended to the depth of one hundred and eighty-five feet; the Pittsburgh Company to the depth of three hundred and thirty-five feet. The Pittsburgh Company still have fifty-five feet to go before they reach the goal for which they are laboring. If the latter company have no bad luck they will be down to the region of the precious metal by the first of June next. The following are the depths at which the silver has been struck by different companies: The Pittsburgh Exploring and Mining Company, at the depth of three hundred and seventy-two feet and three hundred and forty-two feet. The Mason County Silver Company, at the depth of three hundred and eighty-four feet. The Mason City Company, at the depth of two hundred and sixty feet. The first Pomeroy Company, at the depth of three hundred and sixty-six feet. Also, at another place, at the depth of three hundred and seventy-four feet. The second Pomeroy Company, at the depth of three hundred and eighty-six feet. Ohlinger, Milton Company, at the depth of three hundred and eighty-two feet. The Philadelphia Company, at the depth of three hundred and ninety-six feet. The President of the Pittsburgh Company has sent some of the specimens of metallic silver which was brought out of their bore-hole to Mr. Otto Wuth, analytical and consulting chemist in Pittsburgh, and he found them to be:

Silver	80.89
Lead	9.58
Copper	8.68
Gold	0.40
Iron	0.81
	100.00

Mr. Grimm, President of the first Pomeroy Company, sent also some specimens to be analyzed by Dr. Wayne, a practical chemist and mineralogist, who found them to be:

Silver	94.00
Copper	6.00
	100 00

The other companies have had their specimens analyzed, and none came under eighty per cent. of pure silver.

Idaho.

The *Avalanche*, of the 2d. inst., comes to us with a prospectus of a great mining enterprise. It is proposed to organize a joint stock company for the purpose of running a tunnel through War Eagle mountain, from Jordan to Sinker creek, which, if successfully completed, will be one of the most extensive mining enterprises ever engaged in, inasmuch as the tunnel will be over two miles in length. Mr. G. C. Robbins has the scheme in charge and is now surveying, preparing plans, &c., and in a few weeks will start for New York, where he is confident that he can organize a company with sufficient capital to prosecute the proposed work. The *Avalanche* says that the sum of $110,000 is subscribed already, and thinks well of the undertaking. It says that the tunnel would cut, at a great depth, scores of rich ledges already known, besides a large number of others that would doubtless be discovered. Of Mr. Robbins it says that he is "eminently qualified to conduct the enterprise, he having been identified with the progress and development of the Owyhee mines almost from their discovery to the present time. He is a gentleman who is well acquainted with our people, possesses good judgment, energy and perseverance, and is a good business manager, as was evinced when he was Superintendent of the New York G. & S. M. company, now the Owyhee company."..... Speaking of the Owyhee mine the same paper says: This mill, under the supervision of W. D. Walbridge, has recently been repaired and put in splendid running order. Twenty stamps, the whole number in the mill, are now at work, thus affording employment for the six additional pans, making sixteen in all. The mill has now capacity for crushing forty tons per day. Enough ore is now at the mill to keep it running about three weeks, when the roads will again be in good condition for hauling.....McDonald's assay office has a pile of Ida Elmore bullion weighing 7,164 ounces, and worth about $50,000. One of these bricks weighed 1,617 ounces, which is believed to be the largest ever cast in Idaho Territory.....Under date April 25, the same paper describes a visit to the most prominent mines. It says of the Poorman that "the vein matter is of a nature very peculiar, so soft that it is easily taken out with picks without the aid of blasting; consequently powder-smoke and its attendant inconveniences are entirely avoided. It is a wonderful mine, and is at present yielding ore fabulously rich in both gold and silver. In one of the stopes overhead we broke off a piece, from which we obtained two specimens about the size of hen's eggs of almost pure silver, and worth several dollars.....Mr. Walbridge, the superintendent, is putting the mine in such a shape that it can be worked to better advantage than ever before. A splendid shaft is being sunk about 300 feet north of the present hoisting works. It is now down about thirty feet. The steam hoisting works which will arrive as soon as the roads will admit, will be placed at this shaft...The Golden Chariot mine is being worked night and day, and is yielding "scarcely any quartz but in which gold can be plainly seen with the naked eye." The ore-house has been filled and large quantities piled up on the outside, estimated in all at over 400 tons. The road will soon be in proper shape for hauling to the Sinker mill .....Work is progressing briskly on the Ida Elmere, as usual, and, as a natural consequence of its being on the same lode with the Golden Chariot, the character of the ore very much resembles that of the latter. The small steam engine at present employed will be incompetent to do the hoisting from the depth that will soon be attained; therefore a 20-horse power has been sent for and will arrive as soon as freight teams can bring it ...The whim at the New York shaft is in operation day and night hoisting water from the mine.....The Oro Fino company are anxiously waiting the arrival of their steam hoisting works. The whim erected temporarily has been repaired and enlarged, and will be kept running till the engine arrives. .....Work has been suspended on the Woodstock for a few days till the surface water runs off .....A tunnel is being run for the purpose of tapping the Minnesota ledge.....Fred Reuter and others have struck a new ledge on the War Eagle above the Chariot and Elmore. The discovery is called the F. H. Reuter, and is said to be nearly two feet wide on the surface with croppings rich in gold. An extension has already been located and a tunnel started thereon.....Boise county items, condensed from the *World* of April 25, read thus: By word from Deadwood during the week we learn that there is about two and a half feet of snow still in the Basin, and consequently mining had not commenced. The camp is filling up with miners and others, and it will be a lively place when the season of work begins. Mining has pretty generally been commenced about Pioneer, and with a good success so as far as known. Trade there is becoming lively, and the prospects for a good season are better than was looked for a month ago. Mining is progressing fairly at Centreville, but a good many will not be able to open their claims until next month, when Ben Wilson & Co's Big Ditch will commence to supply water. After that a prosperous season of mining is expected.

New Mexico.

A *World* correspondent writes from Santa Fe, under date March 14: For beautiful and grand mountain scenery, health and delightful climate, fertile valleys, productive vineyards, broad

and rich pastures, life-giving springs of hot and tepid waters, and mineral wealth, New Mexico has but few if any superiors among the Territories and States of the West. Not only does it seem to be a country made to hand for the industrious seeker after riches, but the disciples of the gun and rod find in it an Eden of delight. Its mountain forests abound in bear, deer, turkeys, lions, and other game, its prairies with antelope and hares, and its clear, bubbling streams with the gamey trout. Could you visit with me in the season, the vineyards and orchards of New Mexico, and see the luscious clusters hanging from the vines, and see the apricots, pears, peaches, and figs upon the branches, you would exclaim, "Can this be the desert, worthless, New Mexico, of which we have heard so much? And could you lave a suffering body in the gushing waters of one of the many springs you would be forced to believe that at last the fountain of life had been reached, the fountain that banishes disease and renews youth. When we are so fortunate (and we hope to be shortly,) as to have railroad connection with you favored ones of the great cities of the Atlantic States, there can be no question that thousands of those who are now content with Saratoga, Newport, and Long Branch for a tarrying place for a few weeks in the summer months, will hie hither and spend their holidays from business, returning ere long to their counting-rooms rejuvenated by our bracing atmosphere, and delighted with our scenery, and with the determination to come again when another twelve months shall roll around. Leaving vineyards and streams and orchards and pastures, let me once recur to the mineral wealth of the territory. In my last communication from this ancient city of Santa Fe, reference was briefly made to some of the mining districts of New Mexico. It is my purpose in this letter to give some further facts relative to those regions of mineral wealth, that the WORLD (I use the word in two senses,) may know that notwithstanding that heralding forth by means of pamphlets, paid newspaper publications, &c., of the "enormous wealth," "inexhaustible mines," and "Sheba richness" of other territories, poor, isolated, abused New Mexico lays claims to veins of gold, silver, coal and copper, and deposits of iron as remarkable in extent and purity as those of any land. In Pinos Altos district, in the southwestern part of the Territory are probably some of the finest leads of mineral imaginable. The Santa Rita and Hanover copper mines have in years gone by been noted through Mexico as the richest leads of this metal within the then limits of that Republic. The Santa Rita is now lying idle, owing to its being in litigation, and the Hanover is not worked in consequence of lack of protection from the savage Apaches. This mine was worked before the late war quite extensively. The copper in this and the Santa Rita mines is what is known as virgin or native, and can be mined and reduced to ingots ready for shipment for four cents per pound, notwithstanding the payment of high wages to the miners, smelters, and other workmen. By way of Port Lavaca, Texas, or Port Libertad, Sonora, this copper can be put down in New York or Liverpool, at a cost not to exceed ten cents per pound. The Bay State Pinos Altos Mining Company owns besides a vein of copper similar to the Santa Rita, but more easily refined, six fine leads of silver and gold, with the machinery for working. From one of these leads (the Arizona,) one now being taken to and crushed by the six-stamp quartz mill of the company about a mile from the village of Pinos Altos. The mill produces finely. This company also owns smelting works and refining ovens, and plenty of excellent wood for charcoal, timber for the supporting of the shafts, drifts, &c., and excellent pasturage. The Pinos Altos company's fifteen stamp mill (ten stamps working,) and the mill of Col. W. L. Ryerson, are both busily at work turning out the yellow metal in large quantities, and other companies and individuals are arranging to put up additional mills and work different leads. A number of miners from Colorado and elsewhere are, by means of sluices and reservoirs, working placer digging in the neighborhood of the mining village of Pinos Altos, and are doing well. One great advantage the Pinos Altos district has over the Morena mines in the northeastern part of the Territory, is that of climate, enabling miners to work their open air diggings the year round. The snow seldom falls in the winter season, and when it does, rarely remains upon the ground longer than a few hours. Cattle keep in good condition by grazing upon the excellent gramma grass the whole year. I know of no section of the mining territories of the West that offers more favorable inducements to capitalists than the one of which I have written, and I look for a great addition to the capital already invested during the present year. Since my last companies have been organized for the construction of canals for the conveyance of water to the mining districts of the Morena, Placer mountain, and Taos, and it is believed that all will be completed before the advent of the year 1869. The ditch to the Placer will be about seventy miles in length, and will top the Pecos river, a tributary of the Rio Grande. Not only will this canal enable the immense and rich gold fields of the Placer range to be worked, but hundreds of thousands of acres of fertile land now useless, except for pasturage, can, through its agency, be made productive. Sawmills, tools, &c., for the construction of the canal, are now on their way from the States and will be begun in earnest as soon as they arrive. There are now at the Morena diggings about 2,550 miners awaiting the disappearance of the snows on the mountain slides, and in the gulches and canons, to begin their labors. Other miners are arriving daily and those well-informed are of the opinion that there will be at leas 5,000 souls at work by the first of June. The main ditch to these diggings will be about forty miles in length, tapping the Red river, a flush mountain stream, a small tributary of the Rio Grande. The ditch to the diggings near Taos will be in the neighborhood of twenty-six miles. There are at present about 100 miners at work at this point, all of whom are making good wages notwithstanding the disadvantages under which they labor for lack of a sufficient supply of water. Among the mining towns that are growing rapidly, may be mentioned Pinos Altos and Grant City, in the Pinos Altos districts, and Virginia City, and Elizabeth in the Morena. If the proper subsidy is granted to the Union Pacific Railway company, Eastern Division, for the extension of its road to and through the Territory, New Mexico will soon take her place among the most prosperous of the Commonwealths of the Union.

Colorado.

In the *Rocky Mountain* (Denver) *News*, May 13, of which Mr. O. J. HOLLISTER has lately become one of the editors, we find the following interesting article on smelting in Colorado, which we print entire:—Seeing that there was an indefinite, uncertain kind of impression obtaining with regard to Prof. Hill's smelting operations at Black Hawk, we recently paid them a visit and learned what follows. The one matting furnace built last summer has been running constantly since about the first of February, smelting seven tons a day, in two charges. The material items of greatest expense are fuel and fire-brick. It requires a full cord of the former per ton of ore smelted, and the latter are continually needed for repairs. In future they intend to make their own fire-brick. They have on hand the materials for another smelting furnace, but will not build it until the supply of ore shall warrant. They aim to concentrate the ore into a regulus which shall be sixty per cent. copper, having, in order to do that, to smelt well nigh half of it the second time. Besides the copper, worth now, in market, twenty to twenty-five cents a pound, the regulus so far made probably contains fifty ounces of gold and one hundred and fifty of silver, per ton. Some sixty tons of this have accumulated. The cost of sending it abroad and separating it being $270, currency, per ton, and it being possible, the professor thinks, to separate it on the ground for $80, thereby saving $100 on the ton of regulus, $20 a ton on the ore, a very handsome profit of itself, it is designed, as soon as the supply of ore shall warrant the erection of another smelting furnace, to put up separating works adjoining. It would require two furnaces, costing $25,000. Meanwhile it being desirable to set free some of the capital of the company ($125,000) now locked up in ores and regulus, about thirty tons of that made from the Lyon mat, upon which there is a large profit, will be sent abroad for separation. The other will not be, if it can be avoided, for the reason above given. There are on hand nine heaps, forty tons each, of desulphurized ore, besides a great quantity of tailings. It requires skill and attention, a cord of wood, and six weeks, to roast one of these heaps of ore. In Europe one hundred tons are generally roasted in a pile, requiring three months' time. That proportion of the ore, which, in consequence of its poverty in copper, has to be smelted the second time to bring it up to the desired richness, also has to be calcined the second time, which is done in a long reverberatory. The latter has been used in calcining concentrated tailings since the fire-tile in the Gustenhaver or terrace furnace gave out last winter. The latter, a self-feeder and self-firer, which is superseding all other roasting furnaces in Europe, has been repaired and is about to be started again. It does its work well, and at less than half the expense involved in the use of any other furnace. A double one, like that at these works, will consume 1,200 pounds of sulphur in twenty-four hours, the amount of ore desulphurized in that time of course depending on the percentage of sulphur it contains. For instance, of ore containing ten per cent. of sulphur, this furnace would roast six tons in a day. It must contain eight per cent. in order to burn. Some idea may be got of the practical effect of smelting from the following figures, taken from Prof. Hill's books:

Lode.	Am't.	Assay gold.	Value silver.	Paid to owner of ore, c'cy.
Illinois	12 tons	4.4 ozs	29 ozs	$ 73 00 per ton
Burroughs	23 "	6 "	12 "	90 78 "
do	22 "	6 "	14 "	99 45 "
do	27 "	6 "	15 "	100 00 "
Bobtail	25.4 "	6 "	8 "	93 46 "
do	26 "	4.84 "	8.8 "	59 29 "
do	38 "	5.8 "	6 "	88 72 "
Gregory	7 "	4 "	10 "	57 00 "
do	12 "	3 "		71 00 "
Fisk	12 "	5 "	7 "	73 72 "
Gardner	6 "	4 "	15 "	60 28 "
Alps	7 "	3 "	16 "	43 00 "
Perrin	7 "	5 "	17 "	79 78 "
B'kt tailings	14 "	12 "	14 "	$210 63 "

All these lodes, and many others, produce ore, about ten per cent. of which yields as above; that is to say, which is worth $50 to $100 a ton to the producer, and whether it is sorted out for smelting or not seems to make little or no difference with the yield of the stamp mills. Whether the remaining ninety per cent. can be dressed so as to smelt to profit remains to be seen. Prof. Hill is going to try it, using the dressing works of the Consolidated Greogory company near by. Besides the expense of dressing there is more or less loss of gold in the operation. Dr. Johnson crushed a lot of Bates ore fine and dressed it till it was perfectly pure mineral. It then assayed three ozs. gold, and six silver, per ton, doubtless less than it would have done before dressing. Made only moderately fine and dressed only to about seventy per cent. mineral, when, by mixing with dressed tailings, it would smelt well enough, it may be profitably done. In that case, there would be no lack of ore to supply one or two smelting establishments of the kind. It should be done at the mine, concentrating, except by fire, being no part of smelting. Prof. Hill proposes to enter the Georgetown market for silver ores. With that, and the idle lodes in the Gregory district that will be worked, once it can be done to profit, there will probably be enough ore offered before the season is over to justify the building of another smelting furnace and separating works. The Professor thinks he will be able to pay a fair interest on the capital invested, as things are. If so, there need be no fears for the future, because railroads are coming, and prices another year must be considerably less than now. It is certainly to be hoped that stamp mill owners will find and see it to be to their advantage to supply at least one smelting establishment with ores, so as not to discourage the attempt at smelting altogether. This would be worse than for them not to get more than twice or thrice as much for their choice ore as they can themselves obtain from it with stamps.

Georgia.

Dr. S. F. Charles writes to us from the Etowah gold mines, at Cumming, Forsyth county, Georgia, under date April 25: "I have opened several large veins of paying ore, which contain some fine gold and a large amount of sulphurets. I have taken out about 500 tons of ore in merely cutting the veins in the process of opening the mine at several different levels. I will give you further particulars after the mine is in complete working order, and will write you soon in regard to the progress of other mines in this section of the country."

Canada.

The news from the Madoc mines to the 16th inst. is unimportant, and condensed from the *Mercury*, runs thus: The crushing mills at the Barrie mine and at Bridgewater have commenced operations again.... The Daniels, Scott & Taylor Mill, at Upper Elnorado, has been leased by Messrs. Dunstan & Campbell.... Mr. Daniel Hughes, of Rochester, arrived in Madoc last week, bringing with him a portable crushing mill, worked by hand, for the purpose of testing the gold-bearing value of the ore of this section for his own satisfaction.

COPPER.

Michigan.

A correspondent of the Lake Superior *Miner* gives the amount of copper ore imported in 1867 at 306,005 owt., (112 lbs. to the hundred,) valued at $1,041,173, and at the rate of about 12 cts. per lb. for the copper these ores contained .....We learn from the same paper, which bears date May 9, that at the Evergreen Bluff mines good copper ground shows itself between Nos. 2 and 3 shafts in the deep adit, producing richly in mass, barrel and stamp copper. Over ten tons of copper was blasted out a week ago, and the stopes remain rich in the precious metal. By the middle of this month, on the X fathom level, from the winze to No. 3 shaft will be opened. The mine will then have a block of ground about 200 feet in length, with a good back, and will undoubtedly show us more of such yields as last month, there being 24 tons 170 pounds produced.....Work at the Rockland is vigorously pushed. A very fine show of copper has been discovered in the drift on the south vein, going west, the level being literally full of copper, so much of it, in fact, that the parties driving were obliged to go back and work a passage, to get behind this copper-showing ground. But 24 miners are employed.

Colorado.

The Denver *News* says: Mr. J. W. Partridge has just returned from the east, and informs us that he commenced work on his copper mines near the South Boulder at once, and has made arrangements for shipping the ore east for reduction. He has made special contracts with the Union Pacific railroad, and the Chicago and Northwestern, and other roads, for conveying his ores. He is also to begin work on several rich silver lodes near Georgetown, and ship the ores east for reduction on the same terms as he does his copper. Perhaps his most important enterprise is the taking of a stamp mill into Grantite district. It will be a 15-stamp mill, and he intends to have at least nine stamps running by the 10th of June. He will run custom ores as well as ore from his own lode. Mr. Partridge expects to have a number of eastern capitalists here in about thirty days to examine his copper mines.

California.

The Bolinas copper mine in Marion county, according to the San Rafael *Journal* of April 14, is at a stand still. "It is no doubt rich in copper, but a vast amount of silver is required to extract it and the silver out."

Personal.

Dr. J. S. MILLER, of San Francisco, has, according to the papers, secured various bones, mammoth in size, which have been uncovered by the action of the freshets during the late winter, at a depth of about twenty feet beneath the earth's surface. They were found near Dunigan's ranch, Yolo county, fifteen miles from Knight's Landing. Among them are bones of the leg, from the kneejoint of the forearms, ribs, &c. These, the Doctor thinks, approximate more nearly to the bones of human beings than quadrupeds. If they are human, the owner of them must have been of that race of giants, generally considered mythical, who towered to the height of twenty or thirty feet. If of a quadruped, the beast was certainly larger than any now in existence in this country.

ALBERT HERSEY, of Barnstable, Mass., was accustomed to rail at the customs of the day. It is said that he lived on milk and vegetables, and wore a coat made of tanned calf-skins. The widow of his brother once proposed to visit him. He wrote: "Madam, I can't have you here; I am sick, and my wife is sick; I have no hay or corn for your horses; I have no servants; and I had rather be chained to a galley-oar than wait on you myself." It was this eccentric man who founded the professorship of theory and practice of medicine in Harvard University.

Mr. C. A. SCOTT, who for a year or more has been identified with the Madoc (Canada) miners, and the treatment of their ores, has just returned from Georgia. He reports little doing in the Georgia mines; and that some parties interested in the "Stevens' Flux" are putting up small test works in order to make a stir in that State with what he fears is one of the greatest of humbugs Mr. SCOTT left this city on the 19th inst., intending to return to Madre, but it is probable he will make Nova Scotia his field of operations in the future.

Mr. J. A. HITCHINGS, of Cleveland, Ohio, formerly of Colorado, where he worked both as a printer and miner, expects to return to that Territory. He writes: "I shall probably leave Cleveland for Colorado about the 25th May; if any of your friends would like to have a look at that section, I would be happy to have their company, and they can notify me at No. 34 Hamilton street, Cleveland.

Mr. ROSSITER W. RAYMOND, editor of this Journal, sailed for San Francisco on the steamer of the 9th inst., for an extended tour through the mining States and Territories of the Pacific slope, in the discharge of his new duties as Mining Commissioner for the Government. He will probably return to New York some time in October next. Our readers may expect several very interesting letters from Mr. RAYMOND soon.

Mr. R. P. ROTHWELL, an experienced and talented mining engineer, has been selected by the Lehigh Coal and Navigation company, to make a geological and topographical survey of its coal lands lying between Mauch Chunk and Tamaqua. From what we know of Mr. ROTHWELL, we feel assured that the work entrusted to him will be well and satisfactorily done.

J. MARION MORE.—An Idaho paper of the 4th inst., contains an account of the death of this well-known miner, who was at one time one of the owners of the Poorman lode in that Territory, and was considered a millionaro. After a dinner party, at Silver City, at which wine had been partaken of freely, he was shot dead.

Prof. CHARLES G. PAGE, of the United States Patent Office, died on the 5th inst., after a lingering illness. He was the author of many important discoveries in electro-magnetism, and the inventor of an electro-magnetic motive power engine, which attracted some attention about fifteen or twenty years ago.

M. LACOSTE, a respectable shoemaker, has invented a new gun that will fire twenty balls in ten seconds. We hope that M. LACOSTE has reflected that his gun will take off such a number of legs that it will seriously damage the shoemaking business.

LIZZIE EUPHEMIA POCAHONTAS is the name of the only daughter of the celebrated Indian chief, Mr. Spotted Tail. She is "finishing her education" at Omaha. She is learning to sing Italian and play the piano.

PROF. WHITNEY, the eminent geologist, is expected in the California steamer now due at this city from Panama. It is probable that some of our readers will have welcomed him ere these lines are in print.

GASPARINI, the noted musical critic of the *Figaro*, the *Liberte*, and other prominent journals of Paris, died lately in that city. He was first a surgeon in the navy, but afterwards abandoned science for art.

Dr. MARTINE, of Colorado, was in this city week before last, and states that on his return to that territory, which would take place he intended to devote his attention to the silver district.

Dr. PARRY, the geologist of the western section of the Southern Pacific Railroad, is before the public with an interesting report of some half a dozen pages, in pamphlet form.

Capt. BARTON, well known on the Pacific coast as an expert quartz miner, is, in company with Capt. FRINK, on a tour of inspection to Arizona and northern Mexico.

COLONEL HAZARD, of powder fame, died recently, leaving an estate, the papers say, of about $2,000,000.

JOHN P. BOURKE, a pioneer of Arizona, died at Prescott on the 6th ult.

Col. DENT, Indian Agent for Arizona, is in San Francisco.

Patent Claims.

Interesting to Miners, Millmen, Metallurgists, Oil-Men, and Others.

77,470.—FURNACE FOR MELTING GLASS.—Lyman B. Goodhue, St. Louis, Mo.

I claim, 1. The shelf D of a furnace for melting glass, as shown and specified.

2. The combination of a furnace for melting glass with immovable pots, as specified.

3. The employment of reverberatory arches in a furnace for melting glass, arranged as specified.

4. The picking of a furnace for melting glass with sand, as specified.

5. A furnace for melting glass, when constructed substantially as shown and specified.

77,591.—COLLECTING GOLD, SILVER, AND OTHER METALS FROM THEIR ORES.—John Corson, Washington City, D. C.

I claim, 1. The mode herein described of collecting gold, silver, and copper from their ores, by the action of independent currents of electricity, in chrystallizing the metals in an insulated pan.

2. The amalgamating process, with mercury or other suitable substance, in an insulated pan or barrel, or other amalgamator.

3. The mode herein described of forming and applying the battery in the pan, or any other substantially equivalent.

4. The mode of amalgamation of gold and silver with mercury in an insulated vessel, pan, barrel, or any other, substantially equivalent.

5. The stationary battery in the cisterns, in the form described, or any other, substantially equivalent.

6. Using, for the purpose herein named, the aforesaid machinery, and appliances, or any other, substantially the same, in which the same principle is used or involved.

77,592.—FURNACE AND CONDENSER FOR COLLECTING QUICKSILVER.—Joseph C. Coult, San Francisco, Cal.

I claim, 1. The arrangement of the planes d' d' d' in the ore-chambers C C, instead of the vapor-chamber D.

2. The arrangement of the grating d d, placed on the inside of the ore-

chambers C C, to be used with or without the water-linings *f f*, as may be desired, as and for the purposes set forth.

3. The arrangement of making or lining the inside of the condensing-opening or pipes H H H, with copper, silver, or other material that can be coated with quicksilver, as and for the purposes set forth.

4. The arrangement of placing in any part of the condensing-openings H H H, leading from the furnace to the final escape into open air, a series of punched copper, silver, or plate made of other material, that will or can be coated with quicksilver, for the purpose of amalgamating the fumes of mercury thereto, and saving all that would otherwise escape, as and for the purposes set forth.

77,597, patented in England, January 7, 1867.—ROCK-DRILLING MACHINE.—Frederick Bernard Dœring, London, England.

I claim, 1. The combination of the following elements or parts, viz., first, an ordinary cylinder, provided with a piston and piston-rod, suitable for supporting a boring-tool: second, a distributing-cylinder, provided with ports and pistons, actuated from the rod of the ordinary cylinder, the combination being substantially as described.

2 The combination of the following elements or parts, viz., first, an ordinary cylinder, provided with a piston and rod suitable for supporting a boring-tool; second, a distributing-cylinder, provided with ports and pistons, actuated from the rod of the ordinary cylinder; third, a cylinder actuating a pawl, the combination being substantially as set forth.

3. The combination of the following elements or parts, viz., first, an ordinary cylinder, provided with a piston and piston-rod suitable for supporting a boring-tool; second, a distributing-cylinder, provided with ports and pistons, actuated from the rod of the ordinary cylinder; third, a cylinder actuating a pawl, the combination being substantially as set forth.

4. The combination of these elements or parts, viz., first, an ordinary cylinder, provided with a piston and rod suitable for supporting a boring-tool; second, a distributing-cylinder, provided with ports and pistons, actuated from the rod of the ordinary cylinder; third, two cylinders, actuating each a pawl, the one to revolve the tool, the other to advance the boring-tool towards its work, the combination being substantially as described.

77,722.—FURNACE AND PROCESS FOR THE MANUFACTURE OF IRON AND STEEL.—Francis Ellershausen, Montreal, Canada.

I claim, 1. The furnace, in its novel combination of two fire-chambers, *b* and *i*, separated by fire-bridge *m*, as shown in the two modifications, one chamber being a crucible fire-chamber, and the other a reverberatory fire-chamber, both in connection with the crucible *i*, all working together.

2. The process of smelting and refining metals in large quantities and in short time, by the employment of a large crucible with a discharge-hole.

3. The puddling of cast iron in a crucible placed in my furnace, and surrounded by fire, the product being cast steel.

77,730.—IRON FURNACE.—Alexander Hamar, New York, N. Y.

I claim 1. The method, herein described, of injecting steam, superheated steam, or hydrogen into the oven, to mingle with the gases, and increase their heating effect on the hot-blast pipes.

2. The arrangement, in a large combustion-chamber, of the hot-air pipes, as, and for the purpose described.

3. The combination, substantially as set forth, of the hot-air pipes with the interposed deflectors *r*, for the purpose described.

4. The combination, substantially as set forth, of the mixing chamber, the combustion-chamber, and the hot-air pipes.

5. The arrangement, as set forth, of the superheating pipes *f*, in the combustion chamber and above the air-pipes, for the purpose specified.

6. The arrangement of the steam-pipe within the hot-blast pipe, to maintain the steam at high temperature.

7. The arrangement of the steam and blast pipes in sets, at different levels, for the purpose specified.

77,795.—CUPOLA-FURNACE.—Federal C. Adams, Cincinnati, Ohio.

Gudit about Minerals, &c.

☞ The Ringgold, Pa., Iron Company Propcses, under a patent which they hold, to manufacture bioms direct from the ore. One furnace erected last summer has been in successful operation ever since, and with the most flattering results. The company is now erecting five additional furnaces, making six in all, upon land lately purchased at Ringgold, in Jefferson county. The works will be erected contiguous to the Little Schuylkill branch of the Reading Railroad. The tract of land owned in connection with the works, we understand, contains an abundance of iron ore and limestone.

☞ From the Report of the Auditor-General of the State of Pennsylvania, for the year 1867, we learn that more than two-thirds of the total tonnage of the railroads of the State last year, consisted of mineral products, as follows: Anthracite coal, 15,482,140; Bituminous coal, 4,931,378; Petroleum, 834,624; Pig iron, 628,779; Railroad iron, 358,950; Other iron or castings, 349,227½; Iron and other ores, 1,501,564½; Lime and limestone, 735,654¼. Total, 24,822,317½.

☞ The United States survey of the lakes will employ two hundred and forty men this season, principally upon Lake Superior. The daily outflow through the rivers St. Clair, Niagara and St. Lawrence will also be observed. The money now available for the survey amounts to $75,000, and an additional $75,000, which will be necessary to carry on the proposed operations, is granted by the Civil Appropriation bill now before Congress.

☞ The Lehigh Coal and Navigation Company have arranged to place in their Summit Hill mines a mining locomotive to do the work heretofore done by mules in the main gangway, which is about two miles in length. This is probably the first mining locomotive used in this country. It may be remarked, *en passant*, that the Summit Hill mines are shipping more than 2,000 tons of coal per day.

☞ Pennsylvania makes two-thirds of all the glass manufactured in the United States. In Pittsburgh there are sixty-eight glass works, devoted in about equal proportions to bottle, window, glass and flint-glass work. Their annual products comprise 70,000,000 bottles, 600,000 boxes of window glass, and 3,800 tons of glass ware—worth on the aggregate nearly $7,000,000.

☞ The new five cent coins from the mint in Philadelphia are the size of the present piece; the three-cent and one-cent pieces are somewhat smaller. The devices on all of them are alike—on one side the Goddess of Liberty, surrounded by the words "United States of America;" on the other side are the Roman numerals "I, III and V."

☞ An organized party of professors and students of the University of Michigan has set out on a five months' scientific exploration of the Lake Superior region, paying particular attention to the northeastern shore, which has never yet been thoroughly examined. A photographer accompanies the expedition.

☞ The Montana Oil Works, near Pittsburg, were totally destroyed by fire on Saturday before last, together with 1,200 barrels of oil. Loss between $20,000 and $30,000. Insured for $11,000. Three frame dwellings adjoining were also burned.

☞ The Reading (Pa.) *Times* says that three hundred tons of nickel have been taken out of a mine near Pricetown, Berks county. Specimens have been taken to the mint at Philadelphia, for the purpose of testing its qualities.

☞ Numerous parties are leaving Gold Hill and Virginia City, Nevada, and are preparing to start for the new and reputed rich mines of Sweetwater.

☞ A telegram states that the State legislature of Zacatecas, Mexico, has appropriated $200,000 to aid in working the Fresnillo mines.

☞ A company are boring for coal in Butler Township, Luzerne Co., Pa.

All Sorts.

☞ The scientific (?) editor of the Washington *Star* explains why we are shivering with cold just now, in this wise: The unprecedented stretch of winter experienced in this latitude has led to much surmise as to the cause of this failure of the earth's heating apparatus to do its work. Some have supposed that we are entering upon a change of seasons, and the rather appalling theory has been broached that the poles are changing position, and that the arctic region is to swop places with the equator. The astronomers have, however, brought forward an explanation of the late "cold spell" somewhat less disturbing to the nerves, though not altogether tranquilizing. They say that the sun's disc is at present riddled with holes, in other words, with spots, one of which is of very considerable size. It is a deep cavity in the photosphere, and so wide that the whole terrestial globe would find room in it without touching the edges. There is another spot which, though much smaller, still has one of its diameters as large as that of our earth. Herschel and Arago having conceived the idea of comparing the annual price of corn to the number of solar spots observed each year, found, on comparing a series of twenty-five results, that the greater number of spots the higher was the cost of breadstuffs. This shows that these phenomena may reduce the heat of the sun considerably. On this theory a piece of smoked glass will be a handy thing to have about the house; and in laying in coals or providing for winter clothing the first thing in order will be to take a squint to ascertain the dimensions of the holes in the solar atmosphere.

☞ A watchful mother of Rye, N.Y., on looking for a missing key, found it in the possession of her son, who was bound on a kite-flying expedition.

"Why, my son, what are you going to do with that key?"

"Tie it to my kite-string."

"What for?"

"Why, didn't old Ben Franklin tie a key to his kite-string, and catch lightning?"

The mother intimated that however it might be about the lightning, he might expect to catch thunder when his father came home.

☞ A Boston fireman has invented a self-propelling steam fire-engine, which will run almost noislessly along the streets, up and down inclines as well as on a level, and round the sharpest corners. It burns the liquid (petroleum) fuel, and emits no smoke while in operation.

☞ The four largest States in the Union are Texas, 274,356 square miles; California, 188,981 square miles; Nevada, 112,000 square miles, and Colorado, 104,500 square miles.

MARKET REVIEW.

FRIDAY EVENING, May 22, 1868.

Gold and Silver Stocks.—The market has not been so strong this week as last, probably on account of the weather, which has been very severe for the season, with rain-storms and cold up to this time. Prices as a whole rule a shade lower, as will be noticed by comparing our report of to-day with that of last Friday. One or two Colorado stocks are a shade firmer.

	Bid.	Asked.		Bid.	Asked.
Alameda Silver	65	— —	La Crosse Gold	— 39	44
American Flag	— 30	— 45	Liberty Gold	— —	— 5
Atlantic and Pacific	— —	— 80	Manhattan Silver	— —	140 00
Bates & Baxter Gold	— —	— 50	Midas Silver	— 20	— 65
Benton Gold	— 20	— 25	Montana Gold	— 28	— 32
Black Hawk G	5 75	— —	New York	— 58	62
Bobtail Gold	1 05	1 50	New York & Eld'o	— —	1 75
Bullion Consolidated	— 40	1 00	Nye Gold	— 2	— 3
Columbian G. & S.	— 4	— 6	Ophir Mining	10 00	19 00
Combination Silver	36 00	45 00	Ophir Gold	— —	— —
Consolidated Gregory	2 90	3 00	People's G. & S. of Cal	— 5	— 20
Corydon Gold	— 23	— 28	Quartz Hill	— 90	— 95
Edgehill Mining	3 35	3 45	Reynolds Gold	— —	— 4
Gold Hill	— —	1 00	Rocky Mountain Gold	— 11	— 14
Gunnell Gold	— 50	— 75	Smith & Parmelee Gold	2 30	2 40
Gunnell Union	— —	— 43	Sensenderfer	— —	7 00
H'n G & S. bs	— —	— 90	Symonds Fork Gold	— —	1 00
Harmon G. & S. bs	— —	3 00	Texas Gold	— —	— 8
Holman	— 4	— 10	Twin Riv Sil	— —	— —
Hope Gold	— —	— 20	Burroughs	— —	— —
Kipp & Buell Gold	— 5	— 15	Empire	— —	— —
Keystone Silver	— —	— —	Vanderburg G	— —	— 70

Copper Stocks.—The stock board furnishes quotations as follows:

Caledonia C	— —	10 00	Hilton	— 50	1 00
Canada	— —	— 50	Knowlton	— —	2 00
Davidson	45	50	Minnesota	— —	4 00
Charter Oak	— —	1 00	Ogima	— —	— —
Gardiner Hill	— —	1 00	Rockland	— —	3 50

Petroleum Stocks.—Prices are well sustained, and in some instances have advanced.

	Bid.	Ask'd.		Bid.	Ask'd.
Bennehoff Run	1 00	1 50	N. Y. and Alleghany	....	2 75
Brevoort	40	....	Pit Hole Creek	50	75
Buchanan Farm	40	44	Rathbone Oil Tract Co	....	....
Central	35	60	Rynd Farm	10	18
Clinton Oil	80	1 50	Sherman & B	40	1 00
Columbia	....	....	United Pet. Farms	....	12
Manhattan	....	5	United States	1 65	....
National	....	2 00	Union	5 00	....

Miscellaneous Stocks.—Quicksilver is quoted at 30¼; Pacific Mail, 92¼@92⅝; Ashburton Coal, 8½; Delaware & Hudson Canal, 158¼@159; Delaware, Lackawanna & Western Railroad, 120; Panama, 325; Erie, 69⅜; Reading, 93@93⅛; New Jersey Central, 129½; Adams' Express, 58@59; Wells, Fargo & Co., 24½; American, 56@56⅛; Merchants' Union, 29; United States, 57¼.

Government Stocks continue firm, but are not very active. Quotations ranged to-day:

U. S. 6s, 1881, coupon	115¼@115¼
U. S. 5-20s, 1862, coupon	110⅛@110⅜
U. S. 5-20s, 1864, coupon	108⅛@108⅜
U. S. 6s, 1865, coupon	108⅜@108⅝
U. S. 5-20s, July, 1865, coupon	110⅛@110⅜
U. S. 5-20s, July, 1867, coupon	110⅛@110⅜
U. S. 10-40s, coupon	104⅛@105
U. S. 7-30s, June, large	108⅛@108¼
U. S. 7-30s, July, large	108⅛@108¼

Foreign Exchange is quiet. There is, however, a fair business between bankers, at rates barely admitting of the shipment of specie. The market is weak at the following rates:

London, (prime bankers') 60 days'	109⅞@110⅛
London, (prime bankers') sight	110⅛@110⅜
London, prime commercial	— —
Paris, (bankers') long	5.13¼@5.12½
Paris, (bankers') short	5.11¼@5.10
Antwerp	5.15 @5.13¾
Swiss	5.15 @5.13¾
Hamburg (bankers')	36¼@36⅜
Amsterdam (bankers')	41⅜@41½
Frankfort (bankers')	41⅜@41¼
Bremen (bankers')	71⅞@72
Berlin (bankers')	79¾@80

Gold is quite firm at 139⅞@140.

American silver sells at 5⅞@6¾ cents below the price of gold. Mexican dollars are still quoted at 103¼@103¾ in gold.

Money continues abundant and easy. The demand from the street is limited, and the most general rate on call is 5 per cent., with exceptions at 6 per cent. and 4 per cent.

Prime commercial is in demand at 6 per cent. with little offering.

The following will show the exports of specie from the port of New York for the week ending May 16, 1868:

May 10—Steamer Allemania, Hamburg—	
American gold	$274,000
Gold bars	139,000
Silver bars	78,575
Mexican silver	21,001
Foreign silver	10,000
Silver coin	10,000
Spanish gold	2,000
Mar 12—Steamer China, Liverpool—	
American gold	450,000
May 14—Steamer Moro Castle, Havana—	
Spanish gold	124,780
American silver	10,350
May 14—Steamer New York, Bremen—	
American gold	586,000
Foreign silver	1,200
May 15—Steamer Ville de Paris, Havre—	
American gold	910,000
Gold bars	351,200
Silver bars	130,850
Mexican silver	2,000
May 16—Steamer City of Antwerp, Liverpool—	
Gold bars	76,319
Silver bars	63,181
American gold	210,000
Total for the week	$3,150,456
Previously reported	25,849,903
Total since January 1, 1868	$29,000,359
Same time in 1867	14,994,478
Same time in 1866	16,964,006

Copper—has been very quiet but is unchanged in price. The sales do not amount to more than 300,000 lbs., at 23¾ to 24c. for Detroit; 23½c. for Portage Lake, and 33¼c. for Baltimore. Manufacturers keep out of the market, and there is but little disposition to speculate.

The English market is unchanged at £77 10s. for Chili pig.

Tin.—After the large transactions of last week, the market has become quiet, at 24¼ to 24½c., gold, for Straits; Banca 27¼c.; English 24½c., nominal.

Spelter—6¾c. for Silesian, with a dull market.

Lead—is steady at 6¾c., gold, for ordinary foreign.

Scotch Pig Iron—is quiet at $40 for Glengarnock.

American Pig Iron—is nominally $38@40.

Petroleum—Crude is steadily held; we quote at 13c. bulk. Bonded is more in the sellers' favor. The arrivals are very light; 29½c. is the price for standard white; 1,000 bbls. were sold at this price, and 1,000 bbls. for first half of June at 29¾c. The Philadelphia market is very firm, but quiet; 34c. is bid for May.

Receipts for the week ending May 9	pkgs.	9,991
Exports for the week " "	galls.	1,637,706
do. from Jan. 1st	do.	15,963,295
do. same time last year	do.	10,867,682

The following is the quantity exported from other ports, Jan. 1 to May 16:

	1868.	1867.
From Boston, galls.	923,034	671,748
" Philadelphia, "	9,776,887	7,912,074
" Baltimore, "	660,218	939,033
" Portland, "	19,096	.....
" New Bedford "	.....	.....
" Cleveland, "	.....	.....
Total	11,379,232	9,522,855
Total Export from the U. States	27,682,301	20,009,997
Same time 1866		17,743,070
Same time 1865		3,933,070

THE IRON TRADE.

NEW YORK, May 22, 1868.

Domestic.—We have again to report a very quiet market for both Scotch and American pig iron. The demand continues quite small, and our quotations remain unchanged from last week. In Scotch pig we notice sales of Coltness, ex-ship, at $42, and Glengarnock, same, at $40 50. The sales of Summerlee foot up for the week 350 tons on private terms. The sales of old rails foot up about 350 tons at $46 50@46 75. We notice, besides, 50 tons new English rails at $32 50 gold; 200 do. old double-headed do., $46 50; 110 do. English do., to arrive, $46 75 cash. Of scraps, 100 tons from yard sold p. t., and 200 tons ex-ship to arrive at $46 00@47 50. Fifty thousand packs of Russia sheet have been sold, being almost every pack to arrive this season, now held very firmly: Nos. 9 and 10 scarce at 13½@14 cents; other numbers, 12¼@12¾c.: fair assortments, 13c., all gold. The stock is one-third less than the average. Higher rates are looked for, as the supply is short, prices low, and the season for its sale not yet commenced. From store, bar is quiet at old quotations—an invoice of 50 tons Belgian Refined bar, afloat, sold at $37 50, three months.

Foreign.—Advices from London to the 9th inst. are on the whole more satisfactory. The iron trade of Cleveland, and the north generally, is beginning to show some animation. The make of pig iron in the district shows no falling-off, as it is now at the rate of above 1,200,000 per annum, and a large number of furnaces are ready to be blown in as soon as any indications of improvement are apparent. The dispute about wages in the iron trade in Birmigham district is not yet over. Most of the millmen, and no inconsiderable number of the puddlers, have gone in to work, but a good many still remain out. It is thought, however, that the strike has reached its climax and will soon come entirely to an end.

BOSTON, May 20, 1868.

The market is quiet for pig iron, and the sales have been confined to small lots at $42@44, per ton, including Gartsherrie and other brands. American pig has been selling at $40@45, per ton. In bar iron there is very little change with steady sales to the trade. Russia sheet iron is quiet but firm, at 12@12½c. per lb., gold.

The imports of pig iron at Boston from January 1 to May 15, were:

	1868.	1867.
From Great Britain	1,973	11,380
" Coastwise ports	4,030	3,104
Total	6,003	14,484
Decrease		14,484

PHILADELPHIA, May 20, 1868.

Pig iron is dull and prices are unsettled. Sales of Anthracite are reported at $38@39 for No. 1; $36@37 for No. 2; and $33 50@34 per ton for hard. Manufactured iron is firmly held at full prices.

Lehigh Valley Iron Trade.

The following table shows the amount of Pig Iron transported over the Lehigh Valley Railroad for the week ending May 16, 1868, and for the season to that date.

From	Tons.	Total
Carbon Iron Co	160	4,155
Lehigh Valley Iron Co	280	4,800
Thomas Iron Co	610	11,440
Lehigh Crane Iron Co	990	10,530
Allentown Iron Co	670	5,465
Robert Iron Co	230	4,165
Glendon Iron Co	230	9,700
Other shippers	595	6,507
Total	3,765	56,852

Market Prices.

NEW YORK, May 22, 1868.

DUTY.—Bars, 1 to 1¼c. per lb.; railroad, 60c. per 100 lbs.; boiler and plate, 1½c. per lb.; sheet, band, hoop and scroll, 1¼ to 1¾c. per lb.; pig, $9 per ton; polished sheet, 3c. per lb. Payable in gold.

			STORE PRICES.		
Anthracite, No. 1, best	$38 00	@40 00	Bar, Swedes, ord'y sizes	— —	150 00
" " 2x, fdry	36 00	38 00	Bar, Eng. and Am., r'd	95 00	100 00
" Grey Forge	33 00	36 00	Bar, Eng. & Am., com.	85 00	90 00
Scotch Pig, No. 1	39 00	43 00	Sceoil	125 00	170 00
Charcoal, cash	45 00	65 00	Ovals and half round	120 00	@150 00
Old Wrought sc'p, fm yd.	49 00	— —	Band	125 00	— —
" " " fm. vsl.	46 00	— —	Horse Shoe	105	— —
English rails, gold	52 50	— —	Rods, ⅜@3-16 inch	100 00	160 00
American " at works	75 00	— —	Hoop	133 00	185 00
American Bar Iron.			Nail Rod, per lb	9	10
Common, per ton	80 00	85 00	Sheet, Rus., Med. Nos.	17	18
Refined, " "	85 00	90 00	Sheet, s'gle, D. & T. com	5	7
Old Railroad Iron	47 00	@	Rails, Eng., gold, ton	52 00	52 50
			Rails, American	78 00	80 00

STEEL.

English, cast (2d and 1st quality) per lb	18 @23
English Spring (2d and 1st quality)	10 @12½
English Blister (2d and 1st quality)	11½ 20
English Machinery	13⅜ 16
English German (2d and 1st quality)	14 16
American Blister, "Black Diamond,"	11½ 17
American, Cast, Tool " "	21 22
American, Spring " "	10 13
American, Machinery " "	— 14
American German " "	10 13

PITTSBURGH, May 16, 1868.

"We have no change to note in raw irons," says the *Commercial*. "The market, whether as regards prices or demand, is substantially as at the date of our last report.

"Sales of the week were rather light and restricted to the wants of consumers for mixture to stocks in hand.

"A noticeable falling off in the volume of orders for manufactured iron and nails is reported by manufacturers, and it is believed that the bulk of the spring trade has already been realized, and that henceforth until midsummer trade in both crude and manufactured irons will be comparatively light.

"Receipts of raw iron continue liberal in the aggregate—this is especially true of charcoal descriptions—but in standard medium grade forge irons there is but little accumulation.

"Advices from the Mahoning iron district report a strike of coal miners for an advance of wages. As a consequence, seven furnaces have blown out, and there is a probability of as many more suspending operations within the coming week."

ANTHRACITE.

40 tons No. 2 Foundry	$41 00—4 mos.
20 tons No. 2 Foundry	38 00—cash.
95 tons No. 2 Red Short Forge	37 50—4 mos.
10 tons No. 2 Gray Forge	36 00—cash.
200 tons No. 2 Neutral Forge	38 00—5 mos.
155 tons No. 2 Neutral Forge	38 00—6 mos.
80 tons No. 2 Red Short Forge	35 50—4 mos.
50 tons No. 2 Red Short Mottled Forge	35 00—4 mos.

COKE.

150 tons Allegheny river coke	$35 00—8 mos.
100 tons Western Ohio coke	35 50—4 mos.

BITUMINOUS COAL SMELTED FROM LAKE SUPERIOR ORE.

500 tons Medium Gray Forge sold from furnace	$34 50—4 mos.
300 tons Common Gray Forge " "	33 50—4 mos.
360 tons White and Mottled	32 50—6 mos.
120 tons Good Medium Gray on board at furnace	33 50—4 mos.
300 tons White and Mottled to arrive	34 00—6 mos.
100 tons Open Gray to arrive	39 50—6 mos.
180 tons Good Medium Gray on wharf	36 00—6 mos.
50 tons Gray Medium to arrive	37 00—4 mos.
70 tons " " " "	36 00—6 mos.
61 tons Gray on wharf	37 00—6 mos.
100 tons Gray to arrive	36 00—6 mos.

CHARCOAL SMELTED.

50 tons Fancy Forge	$51 00—4 mos.
50 tons " "	48 50—4 mos.
45 tons " "	50 00—4 mos.
25 tons Hanging Rock, Common Foundry	40 00—cash.
50 tons No. 1 Foundry	44 00—6 mos.
25 tons " "	45 00—6 mos.
30 tons No. 1 Medium	43 00—4 mos.

BLOOMS.

10 tons No. 1 Juniata	$90 00—4 mos.
100 tons Muck Bar	61 50—4 mos.

IRONTON, Ohio, May 14, 1868.

The only feature of any note in the market during the past week, says the *Register*, is the decline in metal. This does not appear to give any impetus to business, though it is thought that there will be an increase of orders. Unless manufactured iron sympathizes too much with the weakening in metal, and fails likewise, a better demand will certainly arise. A large number of the furnaces in the county are now in blast, and among them the new and splendid Belfont works. We quote this week:

Mill, hot blast	$36 00@38 00
Foundry, hot blast	39 00@40 00
Cold blast	55 00@60 00

IRON.—Pig metal is dull. Sales of 200 tons No. 1 Anthracite in lots at $38@39; No. 2 at $36@37; and Grey Forge at $34@36 per ton.

MANUFACTURED IRON is quite active, and prices are well maintained.

SCOTCH PIG.—Nothing doing.

BLOOMS are neglected.

NAILS are steady at the following quotations:

Edge Grip, Duncannon, extra quality, per keg	$5 25
Flat Grip, Duncannon	5 15
Common 4d Nails	5 75
4d Finishing Nails	5 75
Slating Nails	5 75
Box Nails, 4d	6 00
Box Nails, 5 and 6d	5 50
Clinch Nails	6 25
3d Nails, Common	6 75
2d and fine 3d Nails	8 25
Bar Iron ½ round and square to 3 inch, per ton	82 50
Flat Iron, 1½ by 5-16 to 6 by 1 inch	82 50
Slit Horse Shoe and Band Iron	95 00
Nails, Spikes, &c., per keg	5 25
"Anvil," Morris, Wheeler & Co	5 25

PHILADELPHIA, May 20, 1868.

IRON.—Pig metal is dull. Sales of 200 tons No. 1 Anthracite in lots at $38@39; No. 2 at $36@37; and Grey Forge at $34@36 per ton.

MANUFACTURED IRON is quite active, and prices are well maintained.

SCOTCH PIG.—Nothing doing.

BLOOMS are neglected.

NAILS are steady at the following quotations:

Edge Grip, Duncannon, extra quality, per keg	$5 25
Flat Grip, Duncannon	5 15
Common 4d Nails	5 75
4d Finishing Nails	5 75
Slating Nails	5 75
Box Nails, 4d	6 00
Box Nails, 5 and 6d	5 50
Clinch Nails	6 25
3d Nails, Common	6 75
2d and fine 3d Nails	8 25
Bar Iron ½ round and square to 3 inch, per ton	82 50
Flat Iron, 1½ by 5-16 to 6 by 1 inch	82 50
Slit Horse Shoe and Band Iron	95 00
Nails, Spikes, &c., per keg	5 25
"Anvil," Morris, Wheeler & Co	5 25

The shipments for the week amounted to 480 tons; the receipts 340 tons.

Manufactured iron is still dull at 3¾@4¼. Both mills continue idle, though the Lawrence will probably be in operation in a few days.

Nails keep in good demand at $5 for 10d. Heavy shipments are being made by nearly every packet.

The Hoe works are turning out well, and receive orders for their entire production.

The foundries are working in full force. Stoves are in good demand.

THE COAL TRADE.

NEW YORK, May 22, 1868.

There has been a general improvement in the coal trade during the past week. Good qualities of coal are sought after and prices remain unchanged. Vessels are somewhat scarce and we quote freights to Boston and a few of the large Eastern ports, 5 to 10c. higher.

The sixty-second Scranton sale of coal is advertised in our columns this week, to take place on Wednesday next, at 26 Exchange place, at the usual time. 75,000 tons are offered. We do not anticipate any decline in the prices obtained last month. The retail trade has improved. Many parties are laying in their winter supply in anticipation of an advance in prices. We would call the attention of those in the trade who are looking for favorite family coals, to the Hill & Harris and Henry Clay White Ash, and Franklin Lykens Valley Red Ash Coal. Sold by Mr. J. G. Moody, room 68 Trinity Building, this city. They are well prepared, free burning coals, and give general satisfaction.

GAS COALS.—There is a fair demand for American, and the Westmoreland and Pennsylvania Coal Companies have advanced their price to $8 50 per ton of 2,240 lbs.

The amount of coal exported from the port of New York for the week ending May 19, was:

Exports for the week	tons..	1,104
do from January 1st	do..	18,474
do same time last year	do..	24,186
Decrease		5,712

Native Montana coal, taken out at Bozeman City, is sold at the mine for fifty cents per bushel and delivered at Virginia City, for $2 25 per bushel. It is thought by some that this Territory will soon be able to furnish sufficient good coal from its own mines to make it independent of the other localities. The question seems to hinge on the probability that the coal will improve in quality as depth is attained in the mines. At present the coal is taken from the surface, and is said to be quite poor.

BOSTON, May 20, 1868.

In English Cannel coal there have been small sales at $20 per ton; Pictou has been selling at $7 50@7 75; and Sidney is nominally $8@8 25 per ton; Cumberland has been selling at $4 75 at Baltimore; $4 35 at Georgetown, and $8 @8 25 here. Pennsylvania and Westmoreland Gas has been selling at $7 20, delivered in Philadelphia, and Anthracite has been in steady demand at $5 50 @6 50 by the cargo, and $6@7 50 in retail lots, as to size and quality.

PHILADELPHIA, May 20, 1868.

The market is dull with little or no variation in prices which will be found correctly reported elsewhere.

The following table exhibits the quantity of Coal passed over the following routes of transportation for the week ending May 16, 1868:

	1867.		1868.		INC. OR DEC.	
	WEEK.	YEAR.	WEEK.	YEAR.	WEEK.	YEAR.
Phil. & Reading R. R.	64,579	1,078,368	69,276	1,076,986 i	4,697 d	1,382
Schuylkill Canal	28,440	198,551	34,268	218,375 i	5,828 i	19,814
Lehigh Valley R. R.	49,578	659,198	48,275	919,740 i	1,343 i	260,542
Lehigh Canal	26,753	120,185	31,265	135,952 i	4,511 i	15,767
Scranton North	8,820	136,150	12,025	147,767 i	3,205 i	11,617
" South	24,778	467,002	22,972	404,678 d	1,806 d	62,324
Penn'a Coal Co. Rail	8,881	236,870	22,622	267,724 i	13,741 i	30,959
Penn'a Coal Canal	.....	3,266	919	4,587 i	949 i	1,321
Del. & Hudson Canal	15,480	263,885	47,241	272,207 i	31,764 i	8,322
Shamokin	9,187	146,969	11,949	145,712 i	1,742 d	1,257
Trevorton	1,029	9,250	191	6,517 d	838 d	2,733
Short Mountain	1,913	12,634	2,695	19,486 i	782 i	6,852
Lykens Valley C. Co.	1,194	17,991	2,310	28,081 i	1,116 i	10,090
Broad Top	5,729	85,725	5,649	83,646 d	80 d	2,079
W'mstown Col'y, E.	2,788	28,737	4,675	57,749 i	1,887 i	29,011
Wyoming South	2,262	24,369	7,190	11,059	4,528 d	13,310
Total	251,411	3,489,160	323,515	3,800,066	.....	.....
	.....	.....	251,411	3,489,160	.....	.....
Increase	.....	.....	72,104	310,906	.....	.....

Report of Coal Transported over Lehigh Valley Railroad and Canal

For the week ending May 16, 1868, compared with same time last year:

SHIPPERS.	RAILROAD. Week. Tons.	RAILROAD. Total. Tons.	CANAL. Week. Tons.	CANAL. Total. Tons.	Grand Total.
FROM MAUCH CHUNK.					
Summit Mines	....	....	10,014	56,086	56,086
Room Run Mines	....	....	1,021	1,598	1,598
Total	....	....	11,186	57,685	57,685
WYOMING REGION.					
Franklin Coal Co	293	293	....	....	293
Audenried	....	50	....	....	50
Lehigh & Susqueh'na	....	....	....	....	....
Germania Coal Co	....	4,759	94	759	5,518
Wilkes Barre C. & I.	....	13,024	4,315	17,046	30,070
Warrior Run	....	10,700	....	....	10,700
Parish & Thomas	369	27,490	501	2,064	29,554
New Jersey	295	8,576	320	996	9,572
Union Coal Co	....	2,432	....	....	2,432
Wyoming C. & T. Co.	....	3,227	....	....	3,227
Newport Coal Co	....	....	....	....	....
Morris & Essex Mut'l	107	1,349	....	....	1,349
East Boston Coal Co.	....	....	....	82	82
John Horton	....	....	....	378	378
Plymouth Coal Co	....	152	....	....	152
Hillman & Son	497	5,474	....	....	5,474
Bowkley, Price & Co.	....	149	....	....	149
Mineral Springs	453	7,922	....	....	7,922
Valley Coal Co	....	....	....	....	....
Enterprise C'y, J. H. S	7,442	11,899	65	287	12,186
G. B. Linderman & Co	....	....	....	....	....
Washington Coal Co.	....	....	....	....	....
West Pittston	....	50	....	....	50
Barclay	....	....	....	....	....
Shawnee	....	3,093	564	1,681	4,772
Consumers Coal Co	....	2,160	....	....	2,160
Harvey & Bro	85	1,661	89	183	183
Wyoming Valley	....	1,916	....	....	1,916
Henry Colliery	....	513	....	....	513
New England	409	845	....	....	845
Del. & Hudson C. Co.	....	11	....	46	57
Other Shippers	....	14	387	2,194	2,208
Total	3,255	108,967	6,339	25,721	134,688
FROM B. M. REGION.					
N.Y. & L. T. H. & Co	748	23,770	....	469	24,239
Honey Brook Coal Co.	3,273	45,794	1,792	2,361	48,155
Ger Pa. Coal Co	1,214	18,154	196	1,026	19,180
Spring Mountain	3,600	38,656	192	187	38,843
Coleraine W.T.C. & Co	1,972	31,412	533	1,997	33,409
B. Meadow (D. W.)	81	137	....	6,041	6,178
John Connery	....	....	....	....	....
Lehigh Zinc Co	....	....	....	....	....
Spring Brook	....	....	....	....	....
Other Shippers	6	169	....	....	169
Total	10,899	158,094	2,614	6,011	164,135
HAZLETON REGION.					
Central Coal Co	....	....	....	....	....
Ashburton Coal Co	....	433	....	64	497
Mt. Pleasant (Halsey	211	7,595	96	554	8,149
Hazleton (A. P. & Co)	6,828	99,323	3,016	11,002	110,325
East Sugar Loaf	2,497	61,681	184	376	62,057
Mount Hall	....	219	....	....	219
Latimer (A. P. & Co)	502	15,963	602	698	16,661
Stout Coal Co	755	13,471	190	1,953	15,424
Harleigh Coal Co	1,003	22,300	272	3,105	25,405
Ebervale Coal Co	1,484	31,806	1,140	4,700	37,506
Jeddo (G. B. M. & Co)	2,766	56,014	1,512	6,091	52,105
Woodside (J. C. Co	236	6,613	643	1,741	7,256
Highland	819	27,313	665	3,021	30,334
Cross Creek (C. B.)	556	10,975	517	1,604	12,579
C'l Ridge (S.W. & Co.	2,304	38,976	1,324	5,975	44,981
Buck Mountain	700	25,858	476	3,106	28,964
Other Shippers	....	....	....	....	....
Total	20,626	417,172	10,641	43,997	461,169
U. LEHIGH REGION.					
U. Lehigh Coal Co	431	25,466	532	2,423	27,899
Other Shippers	....	....	....	....	....
Total	431	25,466	532	2,423	27,899
MAHANOY REGION.					
Mt. Rose Coal Co	65	732	....	....	732
Mount Etna Coal Co	344	2,306	....	83	2,389
Mahanoy Col. [N.M.M	196	11,317	....	....	11,317
Coplay Colliery	1,356	7,057	....	....	7,057
Glendon	1,281	14,926	....	....	14,926
Primrose Colliery	1,150	3,095	....	....	3,095
E. S Silliman	1,878	39,769	....	....	39,769
McNeal Co	1,633	28,392	....	....	28,392
Knickerbocker	1,506	25,004	....	....	25,004
Thomas Coal Co	1,178	12,385	....	....	12,385
Williams & Herring	226	3,685	....	....	3,685
New Boston Coal Co	1,632	17,971	....	....	17,971
Shamokin Coal Co	....	....	....	....	....
Caledonia M. & M	533	9,290	....	....	9,290
Coal f'm Cataw'sa RR	....	....	....	....	....
Other Shippers	....	15	....	....	15
Total	12,983	175,957	....	83	176,040
Grand Total	48,235	919,740	31,265	135,952	1,055,692
Same time last year	49,578	659,198	20,753	120,185	779,383
Increase	....	260,547	4,511	15,967	276,314
Decrease	1,343	....	....	....	....

Schuylkill Coal Trade.

BY RAILROAD AND CANAL, FOR WEEK ENDING MAY 22, 1868.

	RAILROAD.	CANAL.
St. Clair	35,952	.....
Port Carbon	6,413	11,155
Pottsville	1,631	1,953
Schuylkill Haven	21,202	20,092
Auburn	3,291	.....
Port Clinton	2,810	532
Total for week	71,299	33,732
Previously this year	1,076,786	218,375
Total	1,148,085	252,107

Cumberland Coal Trade.

By B. & O. RAILROAD.—The shipments over the Baltimore and Ohio Railroad, for the week ending May 16, were as follows:

From Cumberland & Pa. R. R., via Cumberland:	
Consolidation Company	2,147 08
Borden do.	687 14
From George's Creek via Piedmont.	
George's Creek C. & I. Company	1,510 09
Savage Mountain	74 02
Central "	1,559 16
Atlantic "	599 01
Piedmont "	1,062 06
American	1,634 13
Swanton "	517 08
Potomac "	583 06
George's Creek Mining	.....
Hampshire	1,776 07
Franklin "	779 11
Total	12,731 07
From Eckhart Railroad.	
C. C. & I Co	2,836 14
Total	15,568 01

BY C. & O. CANAL.—There were despatched from this port, from the 4th to the 16th instant, 21,944 tons of Coal, forwarded by the following companies:

American	5,908 12
Borden	1,981 04
Central	6,516 02
C. C. & I.	2,397 11
Consolidation	2,731 06
H. & B.	2,409 05
Total	21,944 00

Prices of Coal by the Cargo.

[CORRECTED WEEKLY.]

At New York, May 22, 1868.

Schuylkill R. A., choice	$6 00@$....	Schuylkill Chestnut	4 50 ....
" Ordinary	5 75	Lehigh W.A Lump Old Co	5 00 ....
" W. A., Lump	5 00	Lehigh Broken	4 87½ ....
" Steamboat	5 00	" Egg	4 87½ ....
" Broken	5 00	" Stove	5 12½ ....
" Egg	5 50	" Chestnut	4 37½ ....
" Stove	5 50		

SPECIAL COALS.—DEALERS' QUOTATIONS.

Diam'd Vein R. A., Sch'kill	6 00	Old Co.'s W. A. Lehigh	5 50 ....
Locust Dale W. A., "	5 50	Mt Pleasant	5 00 ....
Honey Brook " Lehigh	5 50	Broad Mountain	....
Harleigh " "	5 50	Buck Ridge W. A., Sh'kin	....
Spring M'n " "	5 50	H. Heils, E. S'klin, Lerb	5 50 ....
Sugar Creek " "	5 50	New England Red Ash	5 25 ....
Ashburton " "	5 50	Wyoming	5 50 ....

Dealers in these Coals may be found in our advertising columns.

At Philadelphia, May 22, 1868.

Lehigh Lump and St'mb't	5 00@....	Henry Clay	....@4 25
" Broken and Egg	5 00	Locust Mount Lump and Steamboat	3 25 3 40
" Stove	5 50	" Broken	3 35 3 60
" Chestnut	4 25 ..	" Egg	3 60 4 00
Schuylkill R. A.	4 10 4 50	" Stove	4 00 4 15
" Chestnut	2 60 2 70	Lorberry Coal	4 50 ....
" W. A. Lump and	3 25 ..	Shamokin	....
" Broken	3 25 3 50	Franklin, (Lykens Valley)	5 00 ....
" Egg and Stove	3 75 4 00	Broad Top	4 60 ....
Schuylkill Chestnut	2 75@....		
Hill & Harris	.... 4 30		

Scranton Coal at Elizabethport, May 22, 1868.

(Corrected weekly by D. L. & W. R. R. Co.)

Lump	$4 00@....	Egg	4 50 ....
Steamer	4 25	Stove	5 00 ....
Grate	4 25	Chestnut	4 25 ....

Prices for Pittston Coal at Newburgh, May 22, 1868.

(Corrected weekly by Penna. Coal Co.)

Lump, per ton of 2240 lbs.	$4 10@....	Egg " " "	4 20 ....
Steamer, " " "	4 10	Stove " " "	4 55 ....
Grate " " "	4 20	Chestnut " " "	4 05 ....

70 cents additional to New York.

Lackawanna at Rondout, May 22, 1868.

Lump	$4 25@....	Egg	$3 35@....
Steamer	4 35@....	Stove	4 75 ....
Grate	4 35@....	Chestnut	4 25 ....

70 cents additional to New York.

Lehigh Coal at Elizabethport, May 22, 1868.

Lump	5 00@....	Chestnut	4 25 ....
Steamboat and Broken	4 75	Stove	5 00 ....
Egg	4 75		

At Baltimore, May 22, 1868.

Wilkesbarre & Pittston W. A. by car	$5 25@5 50	From wharf or yard, 50c. to 75c per ton additional Retail, del'd, per 2,240 lbs	7 00@7 50
Lykens Valley R. A. by car	....@ 5 55	George's C'k and Cumberland f. o. b. at Locust P't for shipping	....@4 75
Sunbury & Shamokin R. or W. A. by car	5 00 5 50		

At Havre de Grace, Md.

Wilkesbarre or Pittston, W. A., on board	$....@4 85	Sunbury or Shamokin, R. or W. A., on board	....@4 85
Trevorton R. A., on board	5 25	Lykens V'y, R. A. on b'd	....@5 50

Havre de Grace is the terminus of Susquehanna and Tide Water Canal.

At Georgetown, D. C. and Alexandria, Va.

George's Creek and Cumberland f. o. b. ..... $....@ 4 35

Prices of Gas Coals.

May 22, 1868.

PROVINCIAL.	Coarse. Gold.	Slack. Gold.	AMERICAN	Coarse. Currency.	Slack. Currency.
Block House	$1 75	$ 75	Westmoreland Co.	$8 25	$8 00
Gowrie	1 75	75	Despard	8 25	8 00
Lingan	1 75	75	Cameron	8 25	8 00
Sydney	2 13¾	71¼	Penn	8 50	8 00
Pictou	2 13¾	1 18¾	Newburgh Orrel Gas	8 50	8 00
Little Glace Bay	1 75	1 00	Delivered in New York.		
International Co.'s	1 75	....			

Prices of Foreign Coals.

Duty $1.25 per ton.

Corrected weekly by PARMELEE BROS., 32 Pine Street, N. Y.

Liverpool Gas Caking	$ 9 50	Liverpool House Cannel	18 00@19 00
" " Cannel	14 00	" " Orrel	16 00@18 00

Per ton 2240 lbs., Ex. ship.

PRICES FROM YARD:

Liverpool House Orrel, scr'd..$18@20 | Livp'l House Can'l, scr'd. 22 00@— —

per ton 2000 lbs. delivered.

Coal Freights.

(Corrected Weekly.)

Rates of Freight from Newburgh.

RIVER.		EASTERN.	
On "Pittston" Coal, by boats and barges of the Pennsylvania Coal Company, per ton of 2,240 lbs.		Stamford	$1 25
Troy and West Troy	$ 55	Norwalk	1 25
Albany and Greenbush	50	Bridgeport	1 25
Coeymans	45	New Haven	1 25
Coxsackie and Stuyvesant	40	New London	1 40
Hudson & Catskill	35	Norwich	1 50
Sangerties and Barrytown	35	Mystic	1 45
Rhinebeck and Roudout	30	Stonington	1 45
Po'keepsie and New Paltz Land.	25	Sag Harbor	1 45
Fishkill Landing	20	Bristol	1 55
Cold Spring and West Point	20	Newport	1 55
Peekskill	40	Fall River	1 55
Haverstraw	45	Providence	1 60
Sing Sing and Nyack	50	Dighton	1 60
Tarrytown and Piermont	50	Warren	1 60
Yonkers	55	Pawtucket	1 75
The Coal must be discharged with all reasonable dispatch, at the expense of the consignee, who shall also pay wharfage on the boat. Boatmen will tend guy while unloading.		New Bedford	1 90
		Boston	1 90
		East Cambridge	2 10
		Salem	1 90
		Newburyport	2 00
		Portsmouth	1 95
		Portland	1 75

Freights on Coal Sea-borne from Port Richmond, Philadelphia.

May 14, 1868.—From Philadelphia & Reading Railroad Wharves, Phila., to

Boston	2 50	2 80	New York	1 35	1 40
Portland	2 50	2 80	Salisbury	— —	3 05
Portsmouth	2 75	2 80	Salem	2 50	2 80
Chelsea	2 65	2 80	Newport	— —	2 25
Cambridgeport	— —	2 80	Providence	— —	2 25
Fair Haven	— —	2 25	Pawtucket and towing	— —	2 45
Fall River	— —	2 10	Norwich	— —	2 20
Ipswich	— —	3 25	New London	— —	2 00
Lynn	— —	2 80	New Haven	— —	2 00
Milton	— —	2 75	Norwalk	— —	2 00
Malden	— —	3 15	Brooklyn	1 35	1 40
Newburyport	— —	2 75	Greenpoint	— —	2 25
Nantucket	— —	2 65	Hackensack	— —	1 60
New Bedford	— —	2 25	Charlestown	— —	2 25
Roxbury	3 00	3 25			

From Elizabethport and Port Johnston.

Albany	$1 00@— —		New London	1 20	— —
Boston	1 75	— —	Newport	1 40	— —
Bridgeport	1 00	— —	New York	60	— —
Fall River	1 50	— —	Norwalk	1 18	— —
Hartford	1 50	— —	Norwich	1 25	— —
Hudson	1 00	— —	Pawtucket and towing	1 60	— —
Lynn	— —	— —	Portland	1 75	— —
Middletown	1 25	— —	Portsmouth	1 75	— —
New Bedford	1 50	— —	Providence	1 40	— —
Newburyport	2 10	— —	Salem	1 75	— —
New Haven	1 00	— —	Taunton	2 00	— —

Rates of Transportation to Tide Water.

[BY RAILROAD.]

To Port Richmond.—(Philadelphia.)

Philadelphia and Reading R. R. from Schuylkill Haven $2 00

The following are the drawbacks allowed on all coal shipped East of New Brunswick and South of Cape Henry, until further notice:

	Drawback.	Freight.	Nett.
Lump	$1 25	$2 00	$ 75
Steamboat	1 15	2 00	85
Broken	1 00	2 00	1 00
Egg	65	2 00	1 35
Stove	50	2 00	1 50
Chestnut	75	2 00	1 25

From Port Carbon, 8 cents per ton more.

To Elizabethport.

L. V. Railroad from Mauch Chunk to Easton	$ 69
C. R. R., N. J., Easton to Elizabethport	1 06
	1 75
Shipping Expenses at Elizabethport	25
Total	2 00

To Port Johnson.

L. V. R R.	$ 69
C. R. R. of N. J.	1 12
Shipping Expenses	25
Total	2 06

To Hoboken.

L. V. R.R.	69
Morris & Essex R.R.	1 12
Shipping Expenses	25
Total	2 06

[BY CANAL.]

To Port Richmond.

From Schuylkill Haven to Port Richmond	$1 00
Freights and tolls by Raritan Canal	1 90
	2 90
Drawback	30
Total	2 60

To New York.

From Mauch Chunk to New Brunswick, by Lehigh, Del. Div. and Del. & Raritan Canal	$ 90
Freights through	1 25
Towage	20
	2 35

To New York via Morris Canal.

Lehigh Canal	$ 34
Morris "	40
Towage	10
Freight	1 55
Total	2 39

Expenses from Mauch Chunk to Jersey City for Re-shipment.

Lehigh tolls (net)	$ 34
Morris "	34
Freight	1 50
Re-shipping	30
Total	2 48

Provincial Freights.

	Currency.
Sydney to N. Y.	....
Lingan	....
Cow Bay	....
Big Glace Bay	....
Little "	3 00

Foreign Freights.

New Castle and Ports on Tyne	£13@15 keel
Liverpool	12s. 6d.@15s. ton.

New York Imports of Metals, &c.

The following will show the imports of Metals, &c., at the port of New York from foreign ports, for the week ending May 15, 1868. The quantity is given in packages, unless otherwise specified.

Metals, &c.	Quantity.	Value.	Metals, &c.	Quantity.	Value.
Anvils	71	1,098	Lead, Pigs	16,401	89,858
Brass Goods	7	1,809	Metal Goods	78	12,325
Bronzes	2	156	Nails	28	656
Chains and An	77	3,444	Needles	14	6,353
Cutlery	64	23,544	Nickel	6	3,581
Gas Fixtures	2	602	Old Metal	....	2,461
Guns	52	5,484	Plated ware	3	293
Hardware	60	12,681	Percussion Caps	11	3,151
Iron, hoop, tons	103	4,080	Saddlery	4	852
Iron, Pig, tons	471	6,777	Steel	3,078	150,981
Iron, Railroad bars	23,672	133,212	Spelter, lbs	330,549	14,273
Iron, Sheet	33	1,713	Silver ware	2	1,109
Iron tubes	101	273	Tin, boxes	26,308	162,294
Iron, other, tons	5,779	147,305	Tin, slabs, 2,500	125,995	25,813
			Wire	5	992

SAN FRANCISCO STOCK MARKET.

A Telegram from San Francisco, dated May 22, to Messrs. LEES & WALLER, Bankers, 33 Pine street, this city, quotes stocks as follows:

STOCKS.	Bid per ct.		STOCKS.	Bid per ct.	
Gould & Curry	430	@ 437	Belcher	202	@ 310
Savage (per share)	143	@ 147	Uncle Sam	..	@ ..
Chollar Potosi	220	@ 228	California	..	@ ..
Ophir	162	@ 165	Imperial (per share)	200	@ 210
Hale & Norcross	109	@ 109	Alpha	67	@ 68
Crown Point	..	@ 110	Kentuck (per share)	410	@ 425
Yellow Jacket	1,006	@1,115	Cal. Steam Nav'n Co.	70 asked.	

AMERICAN

Journal of Mining.

WESTERN & COMPANY, PROPRIETORS.

ROSSITER W. RAYMOND, EDITOR.

OFFICE, 37 PARK ROW, NEW YORK.

By publishing contributions, the JOURNAL OF MINING does not necessarily endorse the positions assumed by contributors.

Published Every Saturday Morning.

TERMS.—SUBSCRIPTION, $4 00 per annum, in advance; $2 25 for six months Single copies Ten Cents. ADVERTISING: Twenty-five cents per line of thirteen words for each insertion inside, and forty cents outside. Terms invariably cash in advance.

DESIGNING, LITHOGRAPHING, WOOD ENGRAVING, and JOB PRINTING Executed in elegant style, on reasonable terms.

☞ Mr. T. P. PEMBERTON is Editor of the Mechanical Department and Agent for the JOURNAL OF MINING.

☞ Correspondents, exchanges and others addressing us should be *extremely careful* to write "JOURNAL OF MINING," instead of "MINING JOURNAL," to ensure safe carriage. Communications intended for publication should be plainly written, and on one side o ithe paper only.

NEW YORK, SATURDAY, MAY 23.

CONTENTS OF THIS NUMBER.

EDITORIALS.—Railway Reform—Wholesale Criticism—Shaft Sinking—Volatile Matters from Smelting Furnaces.
ORIGINAL PAPERS.—American Sulphur, No. I, by Prof. Henry Wurtz—Notes on Lower California, No. II., by W. M. Gabb, Esq.—The Resistance of Roofing Slates to the Weather, by Prof. G. Hinrichs—The Microscope, P. H. Van der Weyde. M.D.
PRACTICAL LETTERS.—Sketch of the Scranton Coal Mining District, No. I., by David Coghlan, M.E.—The Relative Economy of some of the Machines used in the Ventilation of Mines, by R. P. Rothwell, M. E.
CORRESPONDENCE.—The Stevens Flux.
MINING COMPANIES' STATEMENTS.—Silver Mountain Mining Company.
SCIENTIFIC MEETINGS.—Lyceum of Natural History—Polytechnic Branch of American Institute—Franklin Scientific Institute, Iowa State University.
MISCELLANEOUS.—Experiments in Fireproof Flooring—The New Cornwallite—A Model Scientific Writer—Am. Cast Iron—The British Coal Cutting Machines.
ILLUSTRATIONS—Hoe's Saw and Press Manufactory—Patented Small Wares—Telegraphing Instruments.
MINING SUMMARY—Gold and Silver: Montana—North Carolina—West Virginia—Idado—New Mexico—Colorado—Georgia—Canada—COPPER: Michigan—Colorado—California.
MANUFACTURING AND MECHANICAL NOTES. Some Statistics of the Trade and Manufactures of Ohio.
NEW PUBLICATIONS.
THE IRON TRADE.
THE COAL TRADE.—Quotations, Shipments, Freights.
PATENT CLAIMS.
SPECIAL SCIENTIFIC BREVITIES.
ON-DIT ABOUT MINERALS.
PERSONALS.

NOTICE TO SUBSCRIBERS.

Subscribers receiving their paper in a *blue* wrapper will accept the same as a notification that their subscriptions have expired, and that the JOURNAL will be discontinued unless we are otherwise authorized.

RAILWAY REFORM.

It is a well-known fact that the English railways have been built at a rate of cost per mile far exceeding that of the roads in this country. As an instance of this greater rate of cost, we have only to remark that the average outlay per mile in building the English roads has been about $180,000, while the average cost of eighty important roads in the United States amounted only to the comparatively small sum of $45,000 per mile. Nor, as every one knows who has traveled through the two countries, has this difference in expense of construction been at all the result of natural obstacles presented by the configuration and geological structure of the one country over and above those presented by the other. In point of fact, the English roads, as regards their construction, equipment, and management, are far superior to ours. But, notwithstanding the great cost, and the consequent superior character of the English roads, there still seems to be great opportunities for their improvement. The English engineers are by no means satisfied with the present condition of their roads. Although, in their construction, they have been carried so far beyond our own in the approach to what may be called perfect roads, yet the engineer still finds in them what he calls "fatal defects." The London *Engineering*, in an article entitled "The Fatal Defects of Railways," speaks very pointedly of the great evils that are coupled with the present system of railroad construction. It says:

"First of all, there are the mechanical imperfections of the way. In consequence of these the resistances to traction are much greater at high than at low speeds, whereas, except from the resistance of the atmosphere, there should be no difference at all. The friction upon a railway, as true as one of Mr. Whitworth's lathe beds, would be the same at sixty as at six miles an hour, and it should be the steady aim of the railway science of the future to approach this degree of relative perfection. With this, too, the line of traction, instead of being three feet or more above the plane of resistance, should be coincident with it. Railways should be so made that the body of the carriages should run between instead of above the rails. The latter would then be carried on bed plates rising high on each side, and the draw irons would be in a plane but little, if at all, above the line of resistance, and the continual oscillation, due to the present system of pulling at a height far above that line, would be avoided; getting off the line would be impossible, and in the case of breaking a rail, wheel, or axle, the danger would be less than at present. One of the worst evils of our present system of locomotive construction and working, is that whereby the whole line must be made of a strength at least twice greater than is required for the load drawn. We have from two to three and a half tons on a carriage wheel or a wagon wheel, and from five to seven tons on a locomotive driving-wheel. Just as a bridge must be made to carry the maximum load, the whole line must be planned for the heaviest engine weight, although this weight is carried on but two, four, or six wheels in a train numbering from fifty to one hundred and fifty wheels. When engine weights, on each wheel, are kept down, as they should be, to the standard weight of carriages per wheel, we may have much lighter rails, chairs, sleepers, and ballasting, and much less cost of maintenance. This can only be done upon the double bogie system, whereby eight, ten, and twelve wheel engines may be easily worked with no more than three or four tons on a wheel, and that without undue friction from coupling. There is room for a thorough reform of railway construction and working. There should be found engineers and managers with sufficient perception, courage, and practical talent to carry out such reforms, the principles of which are sufficiently clear to all. Our present timid, halting policy is losing millions yearly to the railway interest of the kingdom, and is perhaps the chief cause of the present unfortunate condition of railway investments."

In the comparison that we have made at the outset, between the average cost of English and American roads, we do not wish to be understood as indirectly suggesting that the roads in the United States ought, in the first instance, to have been built at any outlay per mile equal to that of the English roads. We do not forget that with us railroads have performed a very important part, as pioneers, in the development and civilization of our large extent of territory. By employing cheap methods of construction in railway projection, it has been possible for them to take the lead in the settlement of our wild regions of country. They became the pioneers, so to speak, in the subjugation of the forces of nature—population and affluence has followed in their track. Had it cost us $180,000, instead of $45,000 per mile to build our roads, who will venture to say how far in the future would be the time when New York and San Francisco will have its system of railway communication? But cheap railway construction, although it has performed a great work as a pioneer, ought to cease. The question now arises as to what shall be the course pursued in order to render those cheap lines of road, now altogether the worse for wear, a safe means of transit to the travelling public? If there is need of "thorough reform in the construction and working" of the English roads, if they have "fatal defects" that should be remedied, how much the more is it necessary that there should be a complete reform in the construction and management of our own roads, when so many and such fearful accidents are of almost daily occurrence? We will not undertake to say in how far the remedies proposed in the article we quote would be susceptible of practical application, when applied to our own rickety roads, but it is nevertheless our honest opinion that the main obstacle to their successful application would be the selfish policy that prefers its large dividends in the immediate present, together with its holocausts of innocent victims, to substantial roadways with larger future incomes, combined with safety to the limbs and lives of the great multitude that are continually passing over them.

WHOLESALE CRITICISM.

In one of our exchanges from Colorado we have met with some very severe strictures upon a work that has already received the criticism of our pen. We are no less surprised than sorry, when we note the spirit that seemed to move the writer of the article in question. We are surprised, because we could scarcely have believed that any such wholesale, and manifestly overdrawn criticism of the "Books, Pamphlets and Maps of Colorado" could have proceeded from one of her ablest editors. We are sorry, because from our own investigations we feel convinced that the writer, if he has not done injustice to himself, has done a great wrong to another. The editor must have penned the article in question, when under the influence of some unfavoring star, or he could not thus unjustly have wielded his pen, steeped, as it were, in the gall and bitterness of his own heart, to the manifest injury of one of the members of his own profession, and that, too, in his own State; nor do we doubt but that if he were, to-day, to consider candidly the general and special bearing of his sweeping review, he would perceive that he had subserved neither the interests of himself, his profession, nor his State. It is not to be expected that Colorado, at this early stage of her history, can have a literature equal in quality to that of the long settled States of the East. The first crystallization of a heterogeneous mixture of facts, conjectures, rumors, and prophetic notions into historic form, cannot of necessity be complete. One might reasonably conclude, from the vein of criticism in which the writer indulged, that, making no allowance for circumstances of time and place, he very unjustly thought that the literature of Colorado ought to be as terse as the historical writings of TACITUS, or as complete and philosophical as those of MACAULAY. We can do no more than reiterate substantially what we have already said that "The Mines of Colorado," written by Mr. O. J. HOLLISTER, is the best work on Colorado hitherto published, and to say this is to say very little, and much less than the truth. We can by no means coincide with the view expressed in the above-mentioned criticism, that the writer of the book was so unjust, not only to himself as regards his claims to being the first real historian of his State, but also to that State itself, as to favor this or that mining community or company, in view of pecuniary considerations. Our views in regard to that matter are the same now as when, in a review of the work, we made the statement that the mines of Colorado were enumerated and briefly described, apparently with complete impartiality; and that, though the author had a perceptible desire to speak well of the mines of that region in general, yet he did not wish to advance any private or particular interests. We may say, too, that from our own personal acquaintance with Mr. HOLLISTER we have every assurance that, as a man of honor and integrity, he would never consent to degrade a historical work by catering to the private aims and ends of individuals or companies, in order to advance for the moment his own private interests. But we need not pursue this matter further. We are confident that a careful perusal of the work though it may contain many an oversight, will give to the reader the best of grounds for a judgment in its favor.

SHAFT SINKING.

Often during our observation of the sinking of shafts in deep mines, the thought has occurred to us if there were no method by means of which, under ordinary circumstances, a good movement of currents of air could be secured. And then again it seemed to us as if there ought to be some device by means of which the great loss of time incident to taking up and replacing pumps at each blast could be avoided. One of the correspondents of the London *Mining Journal*, in an article upon "Mining Machinery," touches exactly upon the point in question. The writer is of opinion that an "enormous economy" would result from the proper use of boring machinery in the sinking of shafts. The following arrangement, among others, is proposed by the writer as being perhaps the most efficient and the cheapest. If it is necessary to sink a shaft to the depth of, say, 100 fathoms, there should be, first of all, a six, or eight inch bore-hole put down about a fathom from the proposed shaft. The water is to be raised from this hole by means of an American submerged pump, worked by a steam engine of comparatively small size. The following advantages, it is claimed, would be derived from this: "By putting through say a three foot hole every half-dozen fathoms, the working shaft could be readily kept free from water; and then by simply stopping the upper holes, after lower ones have been made, a good current of ventilation would be kept up. It will be seen at once that by this course of procedure the working shaft need have no pumps in it, so that the time usually wasted in pulling up and replacing them for each blast would be saved. This is, of itself, of course an important item of consideration." In case of a rectangular shaft four feet by twelve, the writer argues that "it could be put down at a less cost and in one-half the usual time, but in this instance, the bore-hole should be put down at an extreme corner of the place chosen for the intended shaft." The sinking of the shaft would then be carried on in two sections, at opposite ends—the end opposite the bore-hole being kept say ten feet below the other. By this means the upper level would furnish a constant means of drainage and ventilation to the lower. Of course the workmen upon the lower level should be protected by means of a frame-work of boards or timbers, from any danger that might result from the working carried on above them. We give place to these ideas in order to increase the general current of information, leaving it to the engineer in the field to say whether, under certain conditions, they may have a practical value.

VOLATILE MATTERS FROM SMELTING FURNACES.

The other day, in turning over some stray leaves of our note-book, we came across the following, upon the metallurgical treatment of the volatile matters that result from smelting copper ores from the Rammelsberg mine, in the Lower Hartz. We think they were first given to the public by BRUNO KERL in his work upon the "Rammelsberg Metallurgical Processes."

It seems that there is a yearly production of about 60 tons of volatile matters, containing from 2 to 3 per cent of copper. This mass of volatilized matter was at one time thrown away; afterward, by way of experiment, it was first mixed with a small per centage of clay, in order to bind it together, and then smelted. A part of the copper was by this means obtained, but not enough to cover the cost. A second attempt was then made to save the copper in the form of vitriol by treating the volatilized mass with dilute sulphuric acid, but this effort did not prove entirely successful, as the residues after treatment still contained from 1-3 to 2-3 per cent of copper. It was thought that a better result might be obtained by treating with dilute sulphuric acid, after having previously roasted the volatiiized matters in reverberatory furnaces.

The above notes are useful in showing the great care taken, and the researches made by the German Metallurgist, in order from a given quantity of ore to get the largest possible returns. Do our metallurgists take as much pains in saving precious metal from the "tailings" of their mills, as is done in this instance in Germany, to save the copper carried off in the draft of smelting furnaces?

NEW PUBLICATIONS.

PREFATORY REPORT OF THE HON. N. M. BECKWITH, *Commissioner General, and President of the Commission.* Washington, 1868.
CATALOGUE OF AWARDS *to American Exhibition at the Paris Universal Exposition of* 1867. Washington, 1868.
THE PRODUCTION OF IRON AND STEEL *in its Economic and Social Relations.* By ABRAM S. HEWITT, *United States Commissioner to the Universal Exposition at Paris*, 1867. Washington, 1867.

These are the first official fruits of the Paris Exposition in this country. From the prefatory report of Mr. BECKWITH, we learn that special reports have been or are to be prepared by different persons on different subjects, as follows:

By Professor F. A. P. BARNARD—On new inventions, scientific apparatus, and instruments of precision.
By Professor J. LAWRENCE SMITH—On methods and processes in chemical science, &c., &c.
By Professor S. F. B. MORSE—On the transmission of intelligence.
By Mr. ABRAM S. HEWITT—On Bessemer steel; and on iron and steel.
By Mr. W. S. AUCHINCLOSS, civil engineer—On railway materials, locomotives, and marine engines.
By Mr. S. B. RUGGLES—On minerals, agricultural products; and on inland and ocean transportation.
By Mr. C. B. SEYMOUR—On important products in science and art.
By T. W. EVANS, M. D—On instruments and apparatus of surgery, surgical dentistry, and military sanitary institutions.
By Mr. L. F. BECKWITH, civil engineer—On the fabrication of

bèton, concrete, cements, and construction of sewers, tanks, wells, &c., &c.

By Mr. Arthur Beckwith, civil engineer—On asphalts and bitumen, and the construction of streets, sidewalks, &c., &c.; and on macadamized roads.

By Mr. E. C. Cowdin—On the culture and manufacture of silk.

By Mr. C. B. Norton—On fire-arms and materials of war.

By Mr. Paran Stevens—On pianos and musical instruments; and on clothing.

By William E. Johnson, M. D—On the preparation of food.

By Mr. Frank Leslie—On the practical application of fine arts.

By Professor J. W. Hoyt—On educational apparatus.

By Mr. J. H. Bowen—On building materials and methods of building.

By Mr. J. R. Freeze—On education, school-houses, &c.

By Mr. J. P. Reynolds—On wools and agricultural products.

By Mr. E. R. Mudge—On woolen manufactures, &c.

By Professor William P. Blake—On gold, silver, and precious metals.

By Mr. M. P. Wilder, William J. Flagg, and A. Thompson—On the vine and its culture; and on horticulture, pomology, &c.

By H. F. Q. D'Aligny, civil engineer—On minerals and metallurgy; on apparatus for boring tunnels; on apparatus for rock-breaking and stamping, washing and separating ores and minerals; on pressed coal, its uses, &c., &c.; on precious metals; on sugar-beet and beet-sugar; on trans-atlantic cable; on sewing-machines; on copper and coal.

The Catalogue of Awards is calculated to afford much satisfaction to Americans. Our percentage of grand prizes, in proportion to the number of our exhibitors, is five times the general average percentage of all nations, and more than three times the per centage of France, which stands next to the United States in this respect. In the percentage of honorable mentions also, we slightly surpass France, and in gold, silver and bronze medals, we are close behind her.

Candor compels us to admit, however, that there is something specious in this method of presenting results. Almost any civilized country, so meagerly represented as was the United States, would be likely to receive a large number of prizes, in proportion to the number of its exhibitors. If we had reduced our display still further, and exhibited only our best and most remarkable productions, we might have boasted that everything from the United States received a gold medal. If our only exhibitors had been McCormick, Wood, Chickering and Howe, we might have gone further, and claimed for this country the astonishing glory of 100 per cent. of Crosses of the Legion of Honor. In a word, we obtained a large percentage of rewards; but the reason was two-fold. Our few good things were very good, and our inferior things were very few. If we had exhibited as extensively as other great nations, should we have gained as many awards as they? Yet, making this deduction, we have still a right to be pleased at the verdict of the world upon American skill and industry. Speaking of Chickering, we have no desire to enter the lists in the great tourney between the two piano-knights; but we cannot bear to express surprise that the official publication of awards announces Chickering *and Son* as the recipients of the Grand Cross of the Legion of Honor. Which is the chevalier? Which wears the real cross, and which the *facsimile?* We are aware that the Legion of Honor is affected more or less by the mercantile spirit of the age; but we presume that the fiction of a personal decoration is still maintained, and we have never heard of its being conferred upon a business firm.

If Mr. Hewitt's report is a fair sample of the character of the papers we are to expect from other Commissioners, we may congratulate ourselves upon the Exposition and its results. Its comprehensive and clear treatment of the condition and relations of a great industry leaves little to be desired. Its scientific value is enhanced by the essay on Bessemer steel, from the pen of Mr. Frederick J. Slade. Among Mr. Hewitt's general conclusions on that subject, we find the following:

"The first is, that the Bessemer process will not, as Mr. Bessemer originally supposed, supersede the puddling process, which appears to be, as yet, the only method applicable to the conversion of by far the larger portion of the pig-iron made into wrought iron; because by far the larger portion of the pig-iron made is of a quality not good enough for the Bessemer process, which, in [its requirements of] the absence of sulphur and phosphorous, is absolutely exacting. It is time that an antidote may yet be found for these two poisons, in which case the area of the Bessemer process would be enormously extended. But even then there would be a limitation to its general use (and this is my second conclusion) arising from the uncertainty as to the quality of each particular cast, requiring a special test for each, in every case where it is to be subjected to great strains."

These and other opinions of Mr. Hewitt are open to some question; and, indeed, he admits that improvements in the Bessemer process, or the discovery of some simple and certain test for the detection of flaws, would obviate the difficulties he suggests. It is the instinctive feeling of the whole world that this process is a great and radical improvement in the metalling of iron and steel, and opens the door to manufactures and applications of which we have hitherto only dreamed.

Scientific Meetings.

LYCEUM OF NATURAL HISTORY.

METALLURGICAL PROCESSES.

A well attended meeting of this Society was held on Monday evening, May 18th, Prof. Newberry in the chair. The special business of the evening was the question whether the Society should accept the rooms offered to it by the Cooper Union, which was decided affirmatively. Prof. Egleston then gave an interesting view of the various metallurgical processes by the wet way, the first of which was employed ten, or at most fifteen, years ago at a place in Venetia. Government no longer permitting the escape of the sulphurous acid vapors from works engaged in roasting pyrites, they were condensed and manufactured into sulphuric acid, in consequence of which the price of this article became so much reduced as to admit of its practical employment in metallurgy. Poor copper ores containing 1–1½ per cent. of the metal can be worked advantageously by treating them with sulphuric acid and precipitating the copper in solution, with iron, copperas being thus obtained as an incidental product. Since that time processes by the wet way have been proposed for many other metals. Thus silver may be obtained from the ore as a chloride, this dissolved in an alkaline solution and thence precipitated; or as sulphate, which may be precipitated with copper, and the latter in its turn with iron, thus getting the copper back and leaving sulphate of iron as an incidental product. Gold is obtained as chloride either by exposing the ore to the direct action of chlorine, or by mixing them with peroxyde of manganese and treating with hydrochloric acid; the metal is then precipitated from this solution. The speaker then alluded to the great loss incident to the ordinary process of working quicksilver ores, which ranges from 17 to 45 per cent., so that poor ores could not be worked at all. A new process is now proposed which will allow the extraction of mercury from ores containing only one or two per cent. The cinnabar ore is digested for some time with a solution of sulphide of baryum which dissolves it; the solution thus obtained is neutralized with hydrochloric acid, the precipitated cinnabar is then washed, dried and treated either according to the method of roasting or precipitation. It was mentioned that oxyde of zinc is now made by the wet way which covers fully as well as the ordinary article. Attention was drawn to the fact that all these processes are far less dangerous to the workmen and to the neighborhood than the old methods, and that they are likely to become very prominent in our future metallurgy. Mr. Hayes then presented to the Lyceum a collection of fossils, sharks' teeth, &c., after which the society adjourned.

POLYTECHNIC BRANCH OF THE AMERICAN INSTITUTE.

IRON ORES—FOSSIL BONES—EMERY WHEEL—ROASTING FURNACE—UNDERGROUND RAILROAD—ARCADE ROAD.

On Thursday evening last the usual weekly meeting of this Scientific Association was held at Cooper Institute. A large and very attentive audience were present.

Prof. S. D Tillman occupied the chair. The papers read, and questions discussed, were of a very interesting character.

Dr. Feuchtwanger read a paper upon the physical mineralogical and chemical properties of the various ores of iron. He also discussed the properties of several minerals containing iron that are rarely met with. During the reading of his paper, numerous specimens of iron ores, were in circulation among the audience. The Doctor concluded his dissertation with a brief summary of the metallurgical process by means of which cast iron, malleable iron, and steel, are obtained from iron ores. He alluded briefly to a process by means of which malleable iron is made direct from the ore, thus avoiding what is known as the puddling process. The use of iron dates back to a very remote period in history. The Egyptian pyramids were, it would seem, bound, together with bolts or bands of this metal. In next week's Journal of Mining we hope to give the Doctor's interesting paper in full.

Prof. Tillman, the chairman, then alluded to a fossil bone that came from Halifax county, North Carolina, which seemed to be one of the vertebræ of a whale. The series of vertebræ had at one time formed a foot bridge over the Tar river. Waterhouse Hawkins, after an examination of the fossil, decided that it did not belong to the Saurian or Lizard family. Vast geological changes must have taken place since the animal to which this fossil belonged inhabited the old oceanic waters. The chairman omitted the usual summary of scientific news on account of the lack of the necessary time.

Dr. Smith, in a few words, alluded to the fossil remains of an elephant and a whale, that had been found in excavating for a railway in the State of Vermont. In this we see an evidence of the vast revolution that the physical character of the earth's surface must have undergone in those geologic ages.

An improved emery wheel was now introduced, made of a species of glue and emery. The gentleman introducing it claimed that it was a hundred fold superior to the old kind of wheels.

Mr. Vivian now introduced a new kind of furnace for roasting and calcining all kinds of obstinate ores. Among its chief merits, the inventor stated that it was a *perfect* desulphurizer, and that it had the advantages of economy, durability and adaptation over and above all other kinds of roasting furnaces.

Dr. Boynton made some remarks upon a vein of lignite, 4½ feet in width, lately discovered in the State of New Jersey. It belongs to a geological period later than the carboniferous age; apparently to the reptilian age.

Dr. Bradley now presented a plan for the construction of an underground railroad, from South Ferry to Harlem. He claimed that it could be done in six months; he proposed to propel the cars in this underground road, by means, either of stationary engines, or compressed air.

Mr. Gardiner occupied the rest of the evening in an interesting discussion of the merits of the proposed arcade railway along Broadway. This appeared, indeed, to be the only really feasable plan.

FRANKLIN SCIENTIFIC INSTITUTE—IOWA STATE UNIVERSITY.

ORIGIN OF GEODES—CRYSTALLINE FORM OF SULPHATES.

This society has been in activity for about a year, being the organized outgrowth of occasional scientific meetings held during the winter months of 1867, at the instance of Prof. Hinrichs. The majority of the members of this society are, or have been students in the analytical laboratory under the direction of Prof. Hinrichs.

As an illustration of the transactions of this society, we shall briefly mention the contents of the two principal papers read at the meeting on March 9, 1868.

Mr. C. C. Safford, student in analytical chemistry, presented to the Institute a very fine collection of beautiful *geodes* collected by him near Hamilton, Ill. He gave a synopsis of the geology of the locality, illustrated by diagrams on the blackboard, enumerated the various minerals contained in the geodes, and stated that he had found the chalcedony geodes in layers of clay, the dolomite geodes only in the dolomitic limestone. A third locality, characterized by limestone, was distinguished for a greater prevalence of calcite in the geodes. The published reports on the Geology of Illinois and Iowa do not give any such information on the relation between the rock and the minerals filling the geodes, probably because the mineralogists examined the geodes at a distance from the locality. The observation of Mr. Safford is valuable as a confirmation of the formation of these geodes by infiltration. The geodes from this region afford most beautiful mineralogical specimens; and they are so abundant that fine specimens may be obtained with but little trouble.

Prof. Hinrichs demonstrated that if SO_2 exists as such in the *sulphates*, (as indicated both by synthesis and analysis) then the normal crystalline form of the sulphates will have the rectangular axes

$$a : b : c : = 3\tfrac{1}{2} : 1 : 3\tfrac{1}{4}$$
$$\text{or} \quad = 1.316 : 1 : 1.732$$

giving the vertical prism of 104° 32½'. The actually observed values of Potassium sulphate differ *less* than half a degree from these theoretical values; the observed axes are

$$1.3 : 1 : 1.749.$$

It was then shown how the other sulphates correspond closely with their normal form, also the chromates, perchlorates, permanganates, etc. Thus giving in detail a further confirmation of the atomechanical principles for the determination of the crystalline form from the chemical formula.

Original Papers.

[PREPARED FOR THE AMERICAN JOURNAL OF MINING.]

THE RESISTANCE OF ROOFING SLATES TO THE WEATHER.

BY PROF. G. HINRICHS.

It is very important to know how far a slate will resist the disintegrating influences of the weather, or its "weathering." A chemical analysis is not sufficient to determine this quality, although slates containing considerable of oxydable substances, or of matters soluble in carbonated water, yield, on the whole, more readily to the weather; but even if a quantitative analysis did give us a desired measure of susceptibility to weathering, such an analysis of roofing slate would be a most tedious and laborious undertaking. The practical test obtained from actual use requires at least a considerable number of years before any trustworthy result can be obtained; hence it is of no use in determining the value of newly discovered exposures of slates, for roofing purposes.

The method of *Fresenius*, fully described in the "*Zeitschrift for Analytische Chemie*," seems to give quite reliable results. It requires only about a month's time, and but very little work. A piece, one inch wide and two inches long, is sawed out of the slate to be tested, and suspended by means of a cord, and a well-fitting stopper in a glass-flask, containing about one hundred cubic centimeters of a nearly concentrated solution of sulphurous acid, very easily obtained by conducting the gas evolved from heated copper and sulphuric acid into a flask containing water. The lower part of the slate must be an inch or a little more above the surface of the liquid in the flask. For greater certainty, a similar piece of slate known to be of excellent quality, may be suspended at the same time, in another flask containing sulphurous acid. The pieces should be *observed* once a week, and finally, *taken from the flasks* at the end of four weeks. The temperature should be about 16° C.

Fresenius has exposed a great number of various kinds of roofing slates of well-known qualities to this test, and finds that this simple method agrees very well with the results of long protracted, actual exposure to the weather. He divides roofing slate into three classes as follows:

I. Roofing slates weathering very little, (good slates.)

II. Roofing slates weathering with difficulty, (middling slates.)

III. Roofing slates weathering easily, (poor slates.)

The first-class, which we venture to term *good*, are unchanged even after four weeks' exposure to the most acid atmosphere in the above flasks. The second class, or *middling slates*, show decided disintegration after two, three, or four weeks' exposure to the same atmosphere, exhibiting clefts and having begun to crumble. The third class, or *poor slates*, show this effect already after one week's exposure.

In order to make this test clearer, I transcribe a few observations from the extensive table of *Fresenius:*

APPEARANCE OF ROOFING SLATE AFTER EXPOSURE.

No.	1 day.	1 week.	2 weeks.	4 weeks.	character.
1	quite dry.	wet.	wet.	hard, no clefts, not soft, not easily broken.	good.
2	wet.	wet.	quite wet.	still pretty hard, but crumbling.	middling.
3	wet.	wet, shows small clefts.	moist, considerably split up.	quite swollen, soft, crumbling	poor.
4	wet.	wet.	wet, slightly split up.	not much split up, but crumbling.	middling.

Fresenius has also found by actual experiment, that fuming hydric-chloride (muriatic acid) cannot be used, because it acts too energetically, so that the differences between the various slates do not become prominent. Immersion in dilute hydric-chloride was without effect, even on the "poor" slates. The distinguished author of this simple and apparently quite practical method has promised further research upon this subject. I hope to present to the readers of the Journal of Mining such results as may appear to be of more general interest.

[WRITTEN FOR THE AMERICAN JOURNAL OF MINING.]

AMERICAN SULPHUR—NO I.

BY PROF. HENRY WURTZ.

Mr. Editor:—I was much pleased to observe, in a recent issue, your new attempt to call attention to an item in the catalogue of mineral resources of our country, which, though of the most eminent importance, has been singularly neglected by those whose province it is to develop these resources—the capitalists of the country. Fruitless and thankless attempts have not been lacking before this, on the part of those whose duty and privilege it should be, in all lands, to direct and counsel in developing such resources—the scientists of the community—to call consideration to the prime importance of establishing the production, from our own teeming ores, of *sulphur;* that nest-egg of chemical products and fabrics, upon whose progeny almost every art of life is now dependent. I myself wrote, now fifteen years since, in the "Annotated Catalogue" of the New York Exhibition in 1853 (New York: G. P. Putnam & Co.—London: Sampson, Low & Co., 1854), the following upon this subject:

"Sulphur is an element of immense importance, not only to the chemist, but also to the whole civilized world. Its applications,

direct and indirect, in the arts, are almost too numerous to mention. Directly, it is used in the manufacture of gunpowder, of friction matches, of ultramarine, in the vulcanizing of caoutchoue and gutta percha, etc. Its indirect uses are principally in the form of sulphuric acid" (page 66).

"Sulphuric acid may almost be said to be the chemist's *factotum*, to so great a multitude of uses in the arts is it applied. Its cheapness, its powerful affinities, the concentrated form in which it may be obtained, and other peculiarities, render it by far the most valuable re-agent in manufacturing operations we possess. * * * The cheapness and beauty of the glass made at the present day, is wholly owing to (sulphuric acid, as an agent in extracting soda from salt, in) the process of LE BLANC. The manufacture of soap, as well as a multitude of other arts in which soda is used, have also kept pace with the increased production of soda-ash. The following may be given as a list of some of the more important substances, in addition to soda, in the manufacture of which sulphuric acid is *indispensable:* muriatic and nitric acids, upon which the arts of refining gold and silver, the jeweller's art to a considerable extent, the great modern art of electro-plating, and numerous other branches of industry depend; the so-called "soda-water" of the shops; acetic, tartaric, citric, oxalic and fluohydric acids; the alkaloids, a class of substances of the highest importance to the science of medicine; alum; ammonia and sal-ammoniac; blue vitriol; iodine and bromine, upon which the photographic art is dependent; bleaching powder, the application of which in bleaching is necessary to the existence of our enormous cotton factories; borax; corrosive sublimate and calomel; bichromate of potash, and consequently the pigments chrome-yellow, chrome-green and chrome-red; Epsom salt; ether; chloroform; phosphorus; platinum.

"Our modern art of telegraphing can hardly be supposed to have ever been reduced to a sufficiently practical form, without the use of sulphuric acid, or one of the acids dependent upon it. The manufacture of stearic acid candles, also, which promises to be of such extensive application, is dependent upon this chemical Briareus; and, in short, it would be difficult to mention a single branch of human industry, which, for its present state of perfection, is not more or less indebted to sulphuric acid" (page 60).

Many more important arts may now be added to this list; as, for example, the refining of petroleum, the manufacture of the aniline colors and other coal-tar products, paraffine, superphosphate of lime, magnesium, aluminum, etc., etc.; but the intelligent reader will require no further enlargement of the list to show him the cardinal importance to the future industry of our country of this mineral element, sulphur. I will but add here that, besides the sulphur (or pyrites containing it) others of the raw materials of many of the above manufactures; such, for instance, as chrome ores, potash, quicksilver, phosphate of lime, copper ores, manganese, etc.; are largely exported hence to Europe and bought back again by us in manufactured forms, at greatly enhanced valuations; the sole assignable cause of this curious anomaly in the industrial system of a nation claiming to rank with the foremost in civilization and intelligence, being the lack of *capital* directed into this channel of chemical manufactures; a channel whose springs and sources are to be found in the production of sulphuric acid; formerly from the raw sulphur of Sicily, but now chiefly from its mineral compounds; which have in no country been distributed more lavishly than in ours.

Indeed, it will be difficult much longer to varnish over, or disguise from the American people, the fact that there is a sad lack of correspondence, a dire disparity, between Knowledge and Power among us. Wealth, which practically brings power and influence, so far as material *progress*, in any country, is concerned, increases with us in a great disproportion to education. The latter advantage is, as we truly boast, widely *diffused;* but is unfortunately at the same time *diluted.* Hence the ease with which a spirit of wild and reckless speculation is excited among our monied classes. Bubbles are quickly blown, but burst more quickly still. The prevalent popular delusion among our capitalists appears just now to be an ignoring of TIME as an element in the development of new enterprises and new modes of producing wealth. They have lost sight of the principle that the most enduring edifices are of slow erection. The wonderful advances actually accomplished by our generation doubtless tend to foster this delusion. Exaggerated expectations are abroad, of *sudden* and magical achievements with slight means, or no means at all.

Hence our land has been of late the paradise of pretenders. If any new thing is to be introduced or accomplished, requiring, for assured success, labor, thought, experiment and expense; the true professional Scientist—who conjoins the knowledge and judgment necessary to a correct analogical reasoner; who has acquired by life-long labor that species of *patient* enthusiasm which is born only of faith in the teachings of experience; who never presumptuously and unrighteously promises, or even imagines, that he can bend the laws of Nature and of God to his behests; who is always readier to point out in advance the difficulties in practical detail, which so often prove to be chief obstacles to the success of enterprises of highly plausible appearance; and who always demands *time* to discover and develop what man is permitted actually to accomplish—is too often looked upon in this country as a mere theorist, or as wanting to "nurse a job," and is shouldered aside by some self-deluded enthusiast, or some superficial smatterer; classes of men who promise everything, but rarely accomplish anything; who gloss over their failures with smooth words and further promises; and, when the means or patience of their disciples fail, go and seek for new victims to devour. Their impotence and impudence is then set down to the account of Science!

Let those who deem I exaggerate, recall the still recent days of the Colorado bubble; when Dousterswivel *redivivus* reigned, and when the land was filled with the scoffs and sneers of "practical men," at those true scientists who asked merely (*as they yet ask*) the time and means to investigate, and to develop the right modes of milling these ores. The mills were built, the "desulphurizers" erected, the mines *afterwards* sought for, and some of them found and actually opened; but in the meantime the bubble became too big and burst, the ten-thousand-dollar-salaried blacksmiths and other practical men were recalled, and a "commodity of rusty iron" scattered here and there over the plains and in the gulches, is usually all that remains to adorn the tale. Men of science, fully competent to grapple with the problem, still stand ready to do so; but where are the rich companies, five per cent. of whose paid-up capital (that has now taken to itself wings) would have employed for years the best chemical and metallurgical talent in the land, and would have *commanded* by this time the fullest practical success?

In another communication, Mr. Editor, I will give some practical suggestions about the production of sulphur in this country.

HENRY WURTZ.

No. 26 PINE STREET, New York.

[MS. FURNISHED TO THE AMERICAN JOURNAL OF MINING BY HON. J. ROSS BROWNE.]

NOTES ON LOWER CALIFORNIA.—NO. II.

BY W. M. GABB, ESQ., PHILADELPHIA, LATE OF THE CALIFORNIA GEOLOGICAL SURVEY.

[Continued from page 314.]

The water courses of the country are hardly worthy of a separate mention. Of rivers, properly speaking, there are none. The largest streams are but a few feet in width, except some few in the extreme northern portion, adjoining Upper California. In the valley of San Jose del Cabo is a little rivulet, fed by the springs in the granite ranges, and furnishing an abundant and steady supply of water for irrigating purposes. A smaller, but equally steady stream is found at Todos Santos, and is the means of keeping up the steady prosperity of the place. Similar permanent streams exist at Comonda, Purissima, San Ignacio, and elsewhere, and by supplying moisture to the soil, enable these places to support a comparatively dense population. These streams invariably sink on reaching the plains, and are lost to the surface, though the water could be regained by shallow wells, or carried on the surface by ditches, thereby much increasing their usefulness. This latter plan was successfully followed by the Missionaries in several instances, the most notable of which is at the deserted mission of Guadaloupe, where the water of San Jose creek was secured above the sink and carried several miles in a ditch or canal, the dilapidated ruins of which still exist. At Rosario, San Ramon, Guadaloupe, and Yia Juana, are streams, one or two of which would be called rivers, even in Upper California. That at San Ramon and the Rio Yia Juana, carrying as much water as Los Angeles River, if not more. Besides the above, there are many smaller streams flowing perennially in the cañons, along a part or the whole of their courses, which I have not deemed worthy of special mention.

Adjoining or lying a little distance from the coast, are numerous islands, several of which are from twenty to fifty miles in length. In the Gulf, the largest is that of the Angel de la Guarda, or the Guardian Angel, said to be rich in minerals, but very rocky and desolate.

Further south, below Loreto, is the long, narrow island, noted for its salt, called Carmen Island. Still further south, near La Paz, are the three islands known as San Josef, Espirita Santo, and Ceralbo. On the west coast, we have, among many others, the large island of Margarita, forming one side of Magdalena Bay; and lying off the coast, opposite the bay of San Sebastian, is the large island of Cerros, or Cedros, claimed to be rich in copper, and famed for its wild goats. Most of these islands are very rough and inhospitable, and entirely unsuited for farming or grazing purposes.

As before mentioned, the whole coast line might be said to be nearly a succession of harbors. Most of these are, of course, small, shallow, partially exposed, or have some other drawbacks; but several will compare well with any other ports on the west coast. Perhaps the finest is the Bay of Magadalena. This bay, in the neighborhood of one hundred miles from Cape San Lucas, on the Pacific side, is about fifty miles in length, and, in places, several miles wide. It communicates with the ocean by two entrances, one at each end of Margarita Island, and is well protected to the seaward by the same island. Its importance as a naval station for our vessels cannot be over-rated; and if our government does not secure it for this purpose, some European nation will be very apt to make an effort to obtain it, as soon as its value shall become known.

Should any colony of foreigners ever settle in Lower California, it will probably be placed on the plains bordering the long northern arm of the bay, where the soil is extremely fertile, and an abundance of water can be obtained from the shallow wells. Nearly opposite to Magdalena Bay is the harbor of La Paz, a fine bay, well protected from all winds except the fearful hurricanes or "temporales," which blow in the months of September and October, and come from such a quarter as to blow directly up the bay. Eight or nine miles down the bay from the town is a sheltered nook, used by the U. S. war vessel on this station, as a coaling station. Here vessels are safely protected on all sides. Half way up the west coast are two large bays—Ballenas, opening towards the south west, and San Sebastian Visciano, opening towards the north west. Into the former empties the San Ignacio Lagoon, and into the latter, Scammon's Lagoon. These lagoons are two land-locked bays, with comparatively narrow entrances, and much frequented by whalers. They are said to have many shoals, though the channels are sufficiently deep for large vessels.

It would be useless, in the present connection, to mention in detail the numberless other ports on the coasts. Suffice it to say, that there are many used by the regular coasting trade, such as the Puerto Escondido, the harbors of Loreto, Moleje, Sta. Maria, Sto. Domingo, and many others.

There is still another item, perhaps, worthy of notice under this head. Several railroad routes across northern Mexico, have been canvassed. Most of them have been spoken of as having their western terminus from Mazatlan northward. Should such an enterprise ever be carried to a successful termination, a short cut across the peninsula would be of value to shorten the distance around the Cape. Several possible routes exist, all of which, with one exception, would be required to pass through Purissima or San Ignacio. From the port of San Bruno, or the neighboring one of San Juan, it is claimed that there is a low pass to the head of the Purissima Arroyo. I did not visit this; but if a road could be made to the head of the Purissima Arroyo, it could then reach the west coast at, say, the port of San Juanico, without further engineering difficulties. From the port of Santa Inez, or San Marcos, above Moleje, an easy route exists up the Arroyo of Sta. Aguida to the base of the main chain. Here a mountain about six hundred feet above the valley has to be surmounted or tunnelled to reach the Arroyo of San Ignacio. Another way to reach San Ignacio, is perhaps easier, however. From the port of Sta. Maria, north of the volcano of the Virgins, there is no obstruction, following the Arroyo of Sta. Marta, until we reach the pass of the Inferrio. Here a tunnel of about a mile in length would carry the road to the mesa above San Ignacio, having a gentle grade to the San Ignacio Lagoon. The easiest route, however, is from the port of San Luis, by way of the Arroyo of Calamujuet, past the old mission of that name, to the mesa of Sta. Ana; along this mesa to the valley of San Andres, and down this valley ard the Arroyo of San Andres, to the coast. Along the whole line there will be no tunnelling required; nature has already made the deep cuts, and there is not a stream to cross. An almost continuous plain extends from coast to coast, without a greater rise anywhere than thirty feet.

[TO BE CONTINUED.]

[WRITTEN FOR THE AMERICAN JOURNAL OF MINING.]

THE MICROSCOPE;

History of its Invention, its Geological Teachings, and its Uses for the Miner, Mineralogist and Chemist.

BY P. H. VAN DER WEYDE, M. D.

(Continued from page 227.)

NO. XI.—ORIGIN OF THE FLINTS IN CHALK DEPOSITS.

The Microscope has solved a problem, relating to a most curious, and thus far mysterious fact, namely: the finding of horizontal bands or layers of flints in many chalk formations. They are sometimes found as black thin lines, sometimes an inch, a foot or a fathom thick, intercalated in the snow-white chalk. In those regions where the latter does not contain such flints—for instance in the chalk hills of Sicily—intermittent layers of flinty clay are found in the chalk; and the microscope shows that this clay consists as decidedly of flint shells as the chalk of lime shells. These flint shells are generally even better preserved than the lime shells, and may be recognized in the solid flints themselves. When these are cut and ground to very thin transparent plates, compact masses of small organic bodies, partly little changed, and partly not changed at all, are revealed by the microscope under the right degree of illumination. The opinion is beginning to prevail, that all the flints found in the chalk deposits, owe their origin to organic clay deposits, by the conglomeration of the organic flint shells to apparently inorganic masses, as in a heap of flour several lumps of dough are formed, when at different spots small separate amounts of water are added.

The most common forms of these flinty shells belong to the so-called *Diatomaceæ*, or, as microscopists now call them, for brevity, *Diatoms.*

[TO BE CONTINUED.]

Correspondence.

[To insure insertion of Correspondence in our columns the full name and address of the writer must be given.]

"Steven's Flux."

BOSTON, May 14, 1868.

EDITOR AMERICAN JOURNAL OF MINING:

In your issue of May 9, in writing of the operation of the "Stevens' Flux" in this city, after speaking in a somewhat doubtful way, of the quantity of gold taken out from a "very little ore;" you write: "We have often had occasion to lament the inaccurate and untrustworthy reports of experiments which are given in the papers, the present is no exception."

With your permission, I will state *accurately*, the result of the experiments referred to by you May 9, and others since made per account of the Acworth Gold Mining company.

About 5 tons of ore was brought from the mines to Boston, March 31. Early in April there was treated in a furnace at East Boston, erected for the purpose of using the "Steven's Flux" with ores.

April —	1,000	lbs. ore,	which yielded	.....	109	dwts. gold
" 20	2,600	"	"	.....	391	" "
May 4	1,000	"	"	.....	117	" "

making from a total of 4,600 lbs. or about 2¼ tons, 617 dwts. gold yield, or to the ton of ore, 274 dwts. gold. Other experiments with 100 lbs. at a charge have also verified the above statement of results. The Acworth Mining Co. have no axe to grind in this matter, and the gold above named is now in the Treasury. With the newspaper reports of these experiments, either for, or against the "Stevens' Flux," we have nothing to do, nor do we care. The experiments were made for the sole benefit and satisfaction of the stockholders of the Acworth Mining Co., and *not* for the purpose of bringing forward the Flux, and we are so well satisfied with the benefit to be derived from using the "Stevens' Flux," that we have made a contract for the material to be used at the mines, and expect, at an early day, to have satisfactory returns therefrom.

THOS. H. BACON, Treas.
Acworth Gold Mining Co.

[We are very glad to receive an accurate statement of the result of the experiments referred to, over the signature of the Treasurer of the Mining company in whose interest they were made. We cordially congratulate the company on the great success of those experiments, and for their future welfare we can but hope that the mass of the ore yet in the mine will prove as rich as that just experimented upon with the "Stevens' Flux." But while we rejoice with the company in its success, we will not forget to remark that if the ore yielded 274 dwts. of gold per ton, in this instance, it would have given as good results had it been treated with the flux used in the ordinary "Mint Assay." The Acworth Mining Company may indeed consider itself on the direct road to fortune if it is the possessor of a gold mine the ore of which yields from $200 to $250 per ton. They may consider themselves far more fortunate than if they were the owners of the richest mines of California or Australia. We shall await with interest, the development of this company's mine, and hope, that, at an early day, they will not be disappointed as regards satisfactory returns.]—ED.

Manufacturing and Mechanical Notes.

No. XXI.

Some Statistics of the Trade and Manufactures of Ohio.

The annual Report of the Board of Trade of Cleveland, Ohio, for 1867, now in press, contains statistics that will interest many of our readers; some of the information we condense as follows:

The amount of iron ores received here during 1867 were:

From Lake Superior	290,937	tons.
" " Champlain	13,000	"
" St. Lawrence county, N. Y.	3,900	"
" Canada. (Lake Superior)	4,091	"
Total for the year	311,928	"

There are in this vicinity, twenty blast furnaces, which turn out 25 tons of pig iron daily, for 300 days, giving a total of 7,500 tons per annum. The rolling mills here turned out last year about

Railroad iron	24,044	tons.
Merchant iron, bar, &c.	17,916	"
Foundries, machinery and castings	7,550	"
Other manufactories	11,500	"
Total for 1867	68,510	"

The whole valued at $8,500,000.

There were 30,000 stoves made here last year, valued at $800,000, for which 8,000 tons of pig metal were used and 3,700 tons of coal and coke. One shop turned out 10,262 lineal feet of iron bridges, valued at $260,000. The Cleveland Boiler Plate Co., used 480 tons of plate, bar and sheet iron, and realized $200,000 this year. The Star Shuttle Machine Co., turned out 300 machines per week or $375,000 per annum. The capacity of the works admit of double that amount. The iron furnaces use 60 tons of coal daily or 20,000 tons per annum. There are opened and worked 50 coal banks (bituminous) at a distance of 40 to 130 miles southeast of this city, from which have been mined the past year 1,300,000 tons of coal. Of this 669,000 tons were brought to Cleveland, reshipped to other points 335,000; left to be consumed here, 334,000 tons.

About 200,000 tons of iron, and 9,000 tons of copper were sent to Pittsburg from this point during the year. There are three manufactories of sulphuric acid here, which collectively made 27,000 carboys of acid during 1867 and restored 6,000 carboys more, after having been used in petroleum refineries.

Of petroleum, there were received at this place 750,000 barrels, and 500,000 barrels were refined here. For hoops for petroleum barrels 2,250 tons of iron were used here in 1867. 30,000 tons of lime-stone were received for 1867, and 100,000 barrels of white lime made in this city therefrom. Of building stone chiefly white sand-stone from Berea, 12 miles distant, there were received 83,000 tons, of which 25,000 were sent to New York City. This stone is used here for furnace and forge hearths, in preference to fire-brick; it has been found to stand fire better than any other stone yet tried on the Continent. One large building built of it was burned last season and not a crack found in the walls after the fire, or a stone misplaced, and the building is now being fitted up again on the same walls. Of large grindstones 14,500 tons were made in this vicinity, and 5,500 tons of smaller ones. One powder manufactory running half the season turned out 25,000 kegs of powder. There are 26 steam vessels, mostly propellers, owned chiefly here, and trading from this port, most of them employed half the season on their return trips in transporting ores and coals hither; 20 other steamers trade to and from Cleveland, while one line will put 10 new boats in commission in a few months. As a matter of some interest we may mention that borings on the Lake Shore, near the city, made to test the feasibility of constructing a water tunnel under the Lake, like that at Chicago, after penetrating some 60 feet of clay sediments beneath the beach gravels, etc., struck into a large accumulation of gas; it, took fire readily and barned continuously.

The Bristol Coal Cutting Machine Prizes.

In a late number of the London *Engineering* we find the following touching the Coal Cutting Machine prizes which were advertised about a year ago in our columns, and for which American Inventors were invited to compete: "A short time ago the South Lancashire and Cheshire Coal Association offered a number of prizes for coal-cutting machines; but, on account of some stipulations as to royalty, inventors held aloof, and the number of competitors was very small. In consequence of this it was resolved at a recent meeting of the Association to withdraw the objectionable stipulations, subject to the assent of the competitors who have already entered machines for trial, and to substitute gold, silver, and bronze medals for the money prizes of £500, £300, and £200, previously offered."

At the Springfield car works, Massachusetts, some state railway carriages have been made, and shipped for the Viceroy of Egypt.

Mining Companies Statements.

SILVER MOUNTAIN MINING COMPANY.

We have just been favored with a neatly gotten-up pamphlet in which the condition of the above-mentioned mining company is fully set forth. Upon glancing our eye over its pages we learn that it was organized under the incorporation laws of the State of New York, March 21, 1868. The company is formed upon a capital stock basis of $1,000,000 divided into 20,000 shares. The working capital of the company amounts to $325,000, of which $25,000 is cash, the balance reserved stock. We learn that the mining property of this company consists of five separate silver lodes in Hot Creek Mining District, Nye county, Nevada. They are known as the "Gazelle Mine," "Mountain Mine," "Prometheus," "Hector" and "Ariel." They give in the aggregate 5,850 lineal feet of ledge. The pamphlet claims that the title to the property is perfect, but that in order to prevent the possibility of future difficulty it is deemed advisable to procure a United States patent for each of the mines as soon as practicable.

The remarks that are made upon "Silver Mining as a Legitimate Enterprise," upon "The Past," and "The Future," are very much to the point, though of course not wholly unexceptionable in their character. The statement that "it will be the settled policy of this company to provide against the contraction of any debt of any name or nature, and to manage the entire affairs of the company with judgment and economy," argues well for its future success. It must not be forgotten, however, that "it is much easier to say than to do." On the whole, the policy of the company, in so far as it is foreshadowed in the pamphlet, seems to be one that argues success. We hardly think they would erect a mill at the cost of twenty, forty or fifty thousand dollars, before knowing whether their ledges contained any ore. The veins have an average width of 6 and a half feet—the smallest being 4 feet wide, the largest 11 feet.

If the yield of precious metal from the ores of these veins should prove as great as is set forth in the descriptions of the property, there is, certainly, a very valuable property in the hands of this company. The ores, it seems, vary in richness from $75 to $1,800 per ton. The pamphlet contains some extracts from western papers, in which, of course, the great mineral wealth of the region is commented upon. This we deem entirely unnecessary. A legitimate mining company, with valuable property in a good locality, seconded with proper working capital, need trouble itself very little with clippings from newspapers. The pamphlet closes up with an article from the *Stockholder*, New York, Feb. 4, 1868, in which, as branches of industry, the relative value of coal, and gold and silver mining are considered. A neat map of the ore-producing districts of Central Nevada precedes the title page of the pamphlet.

The organization of this company in the manner set forth in the pages of its prospectus, and at the present moment of stagnation in almost all mining enterprises, argues strongly in favor of its legitimacy, honesty, and capability. We shall watch its career with interest, and hope that the very favorable opinions we entertain of its future success will be far more than realized.

62D AUCTION SALE OF

SCRANTON COAL.

NEW YORK, May 19, 1868.

The Delaware, Lackawanna and Western Railroad Company will sell, by Messrs. JOHN H. DRAPER & CO., Auctioneers, at the Company's salesroom, 26 Exchange Place, New York, on Wednesday, May 27, at 12 o'clock, noon,

75,000 TONS OF COAL,

From the Lackawanna regions, of the usual sizes, deliverable at their depot, Elizabethport, N. J., during 1868.

TERMS: Fifty cents per ton, payable in current funds, on the day of sale, and the balance within ten days thereafter, if required, at the office of the Company.

may 23:1t SAMUEL SLOAN, President.

C. B. LINDERMAN & CO.,

MINERS,

SUGAR LOAF,

LEHIGH COAL

OFFICE:

50 TRINITY BUILDING,

may23:1y 111 BROADWAY, N. Y.

AA American NATURAL LUBRICATING OILS A

PREPARED EXPRESSLY FOR ALL CLASSES OF MACHINERY.

DO NOT CHILL.

GUARANTEED FREE from GUM OR GRIT.

Endorsed by the leading MECHANICIANS and ARTISANS of the United States and Europe as the

BEST LUBRICATORS IN USE.

☞ Send for Circulars. ☜

S. ST. JOHN, Agent,

Volcanic Oil and Coal Co,

7 Broadway, New York.

Box 4781. may16-1y

EVERY FARMER SHOULD HAVE THE WORK!

"STERILITY IS LAID."

PROF. VILLE'S NEW SYSTEM OF AGRICULTURE.

AN ADDRESS BEFORE THE BEDFORD, N. H., FARMERS' CLUB, FEB. 28, 1868, by JOHN A. RIDDLE, Esq.

Published by request of Club. Price 25 cents.

For sale by WESTERN & CO.,

may23:tf 37 Park Row, New York.

THE MASS. INSTITUTE OF TECHNOLOGY

Offers a thorough and practical general education, founded upon the Mathematical, Physical and Natural Sciences, English and other Modern Languages, and Mental and Political Science; also, a full course of Studies and Practical Exercises for students preparing for the professions of the Civil, Mechanical, and Mining Engineer, Chemist, Metallurgist and Architect.

The course extends through four years, the studies of the first and second being common to all; those of the third and fourth selected to suit the profession in view.

Minimum age of admission, sixteen. Entrance examinations are held July 13th and September 28th. For fees and other particulars address "Prof. WILLIAM P. ATKINSON, Sec'y of Faculty Mass. Inst. of Technology, Boston."

may16:4t WILLIAM B. ROGERS, President.

THE FUEL SAVING

FURNACE COMPANY,

No. 205 BROADWAY,

Jan. 1, '68-1y NEW YORK.

COPPER SMELTER WANTED.—A practical Copper Smelter, experienced in making Copper Regulus from Ore, with wood fuel, is wanted for a California mine. One that thoroughly understands his business may apply with references, to Box No. 653 Boston Post Office.

may16:3t:is

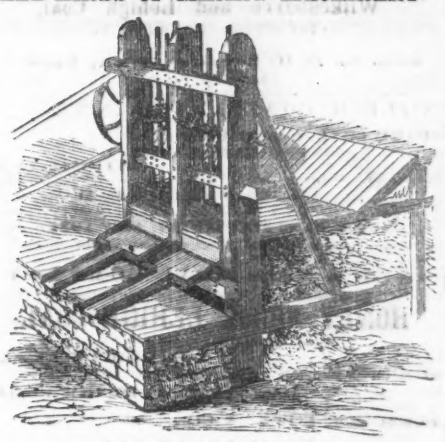
CONTRACTORS, QUARRYMEN and MINERS engaged in blasting Rock can save from FOUR to TEN DOLLARS per day by using WEILER'S PATENT PORTABLE ROCK DRILLING MACHINE, which, with one man to operate it, will do more work than three men. Address WEILER & DAFFORD, Washington, N. J. may23

METALLURGY.

MOREY, SPERRY, & CO.,

MANUFACTURERS OF

ALL KINDS OF MINING MACHINERY.



CALIFORNIA STAMP MILLS,

WITH WOOD FRAMES.

Wheeler, Randall & Sperry's Iron Batteries.

WHEELER & RANDALL'S

PATENT EXCELSIOR GRINDER & AMALGAMATOR,

THE BEST IN USE.

HEPBURN & PETERSON'S

PATENT PAN AND SEPARATOR.

WHEELER & RANDALL'S

Patent Conoidal Separator, with Latest Improvements.

WHEELER & RANDALL'S PATENT CONCENTRATOR,

With Z. Wheeler's Patent Self-Discharging Quicksilver Apparatus. This machine is an entire success.

Rock Breakers, Engines, Boilers, Shafting, &c., &c. Furnaces. Shoes and Dies of the best White Iron. Retorts for Gold and Silver. Also furnish all kinds of mining supplies. Prof. Wurtz's Sodium Amalgam. Nitrate of Mercury (application patented by Henry Brevoort, Esq.), &c.

Will also furnish complete Plans and Specifications for Mills, Machinery and Buildings, and give practical information in Mining, Milling, Amalgamating and Concentrating Gold and Silver Ores.

Agents for H. J. BOOTH & Co., San Francisco, also for Miners' Foundry, San Francisco.

MOREY, SPERRY & CO.,

95 Liberty street, New York.

F. MOREY. J. A. SPERRY. P. M. RANDALL,

may9 Of Wheeler & Randall, San Francisco.

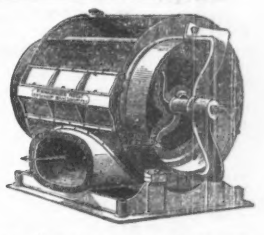
SMITH & SAYRE

MANUFACTURING COMPANY,

PROPRIETORS AND MANUFACTURERS

OF THE

MACKENZIE PATENT



BLOWER and CUPOLA and SMELTING FURNACE,

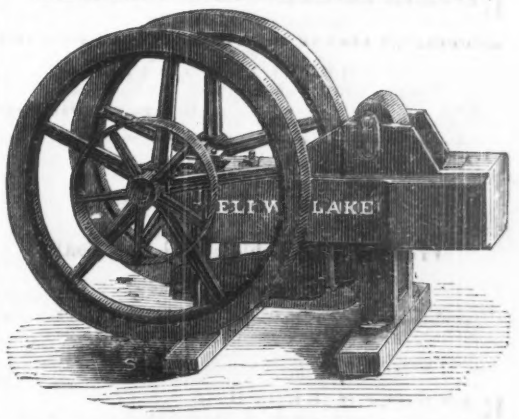
Also, Mackenzie's Patent GAS EXHAUSTER and COMPENSATOR. Address

SMITH & SAYRE MANUFACTURING COMPANY.

95 Liberty street, N. Y.

Send for illustrated pamphlet. mar26

BLAKE'S STONE BREAKER.



The office of this Machine is to break Ores and Minerals of every kind into small fragments, preparatory to their further comminution by other machinery.

The machine has now been in use, enduring the severest tests, for the last ten years, during which time it has been introduced into almost every country on the globe, and is everywhere received with great and increasing favor as a labor saving machine of the first order.

Illustrated circulars, fully describing the machine, with ample testimonials to its efficiency and utility, will be furnished on application, by letter, to the undersigned.

☞ The Patents obtained for this machine in the United States and in England having been fully sustained by the courts, after well contested suits in both countries, all persons are hereby cautioned not to violate them: and they are informed that every machine now in use or offered for sale, not made by us, in which the ores are crushed between upright convergent faces or jaws actuated by a revolving shaft and fly wheel, are made and used in violation of our patent.

BLAKE, BROTHERS,

mar14-1y 351 New Haven, Conn.

ASSAY FURNACES.—Pietsch's Improved Kent's Universal Furnace for melting ores, cupelling and distilling. Light and durable, and all that is desired for the laboratory or for dentists' use. Cupel moulds, tongs, and Iron Retorts of all sizes. Address HERMAN PIETSCH, manufacturer of Chemical Apparatus, 183 Delancey street, N. Y. Reference, EDWARD N. KENT, Chemist, 14th street, formerly melter and refiner at the U S. Assay Office. ap4:3m

COAL DEALERS & SHIPPERS.

WHITE, FOWLER & SNOW,

Successors to JOHN WHITE & CO.,

Wilkesbarre and Lehigh Coal,

FOR STEAM AND FAMILY USE.

OFFICE,

Room No. 75, 111 Broadway, (Trinity Building).

JNO. WHITE. LINDLEY H. FOWLER dec30 LOUIS T. SNOW.

ENGLISH COAL AND CANNEL.

DESPARD COAL, from Baltimore,

PROVINCIAL COAL,

ANTHRACITE COAL.

For Sale in Lots to suit.

PARMELE BROS.,

AGENCY OF GEORGE WRIGHT & CO., LIVERPOOL,

Office, No. 32 PINE STREET, NEW YORK.

dec30:66:67 Yard, West 22d Street, near 10th Avenue.

HONEY BROOK COAL COMPANY,

Exclusive Miners and Shippers of the Celebrated

HONEY BROOK LEHIGH COAL,

NO. 111 BROADWAY, NEW YORK.

JAS. H. LYLES, Agent.

Wharves, Port Johnston, N. J. Philadelphia Office, 209 Walnut street.

ap20:1y J. B. McCREARY, President.

HECKSCHER, BOWNS & CO.,

NO. 111 BROADWAY,

(TRINITY BUILDING), ROOM 79, NEW YORK CITY.

Wholesale dealers in the best qualities

ANTHRACITE AND BITUMINOUS COAL.

Agents for the celebrated "HARTFORD ASSOCIATED COAL COMPANY'S" COAL.

Wharves: Pier No. 4, Port Richmond, Philadelphia; foot 20th street, East River. vol2:5ap

---

CALDWELL, GORDON & CO.,

WHOLESALE DEALERS IN

ANTHRACITE AND BITUMINOUS COAL.

HENRY HEIL'S

CELEBRATED EAST FRANKLIN COAL,

NO. 35 PINE STREET, NEW YORK.

S. CALDWELL, JR. F. A. HALL, N. P. GORDON, S. B. YOUNG

BOSTON, Office 144 State St. PHILADELPHIA, 112 Walnut St.

jan6:1f

DAY, HUDDELL & CO.,

MINERS AND SHIPPERS OF

HARLEIGH LEHIGH COAL,

And the Celebrated

HICKORY, BROAD MOUNTAIN, EXCELSIOR, SHAMOKIN AND NEW ENGLAND RED ASH.

OFFICES:

Room 51, TRINITY BUILDING, 111 Broadway.

Philadelphia, 109 WALNUT STREET. Boston, 7 DOANE STREET.

ap20 :1y

LEWIS AUDENRIED & CO.,

Miners and Shippers of

CELEBRATED ANTHRACITE COALS,

Diamond Vein and Locust Mountain.

FROM PHILADELPHIA AND THE MINES, ELIZABETHPORT AND JERSEY CITY

Also, superior CUMBERLAND COALS.

205 Walnut street, PHILA. 14 Kilby street, BOSTON.

20 Westminster street, PROV. 24 Second street, BALTIMORE

27:1f 110 BROADWAY, NEW YORK.

SAMUEL BONNELL, JR.,

OFFERS FOR SALE

SUGAR CREEK

LEHIGH COAL,

Delivered on board vessels at Pier No. 4, Elizabethport, N. J.

Office, 43 & 45 Trinity Building, 111 Broadway N. Y. 1:3.qp27

NEW BOSTON COAL MINING COMPANY,

Office, No. 55 Broadway, New York.

Miners and Shippers of Superior

BUCK MOUNTAIN COAL,

Deliverable at Elizabethport and the Harbour of New York. Supplied to Steamers, Dealers and Manufacturers at market rates.

F. H. DELANO, Treasurer. dec28:67-68 G. WAYLAND, Sales Agent.

REPPLIER, FREEMAN & CO.,

MINERS AND SHIPPERS OF

REPPLIER'S LOCUST MOUNTAIN, DUNCAN RED ASH

AND

CUMBERLAND COALS.

WHARF, NORTH EIGHTH STREET, WILLIAMSBURG.

Office, - - - - - - 111 Broadway, New York.

mar30:1y

COXE BRO.'S & CO.

CROSS CREEK COLLIERY.

MINERS AND SHIPPERS

of the Celebrated Cross Creek

Free Burning Lehigh Red Ash Coal

FROM THE BUCK MOUNTAIN VEIN

OFFICES:

Philadelphia, Walnut Street. | Drifton, Jeddo P. O. Luzerne, Co., Pa.

Agent in New York SAMUEL BONNELL, Jr., Room 43, Trinity Building, 111 Broadway.

Feb. 1-1 yr

RANDOLPH BROTHERS,

SOLE AGENTS OF THE ORIGINAL

SPRING MOUNTAIN LEHIGH COAL,

Extensively Used for Smelting Iron.

ROOMS, 28 AND 30 TRINITY BUILDING, NEW YORK ap:17f

ASHBURTON COAL CO.,

MINERS AND SHIPPERS OF

'LEHIGH COAL,

Delivered direct from the mines, or for reshipment at Port Johnston

LOUIS J. BELLONI, Jr., Pres't.

2:4 qp OFFICE, No. 41 PINE STREET, NEW YORK.

WILKESBARRE COAL,

DELIVERED DIRECT FROM THE MINES OF

The Wilkesbarre Coal and Iron Company,

OR, FOR RESHIPMENT AT

HOBOKEN AND JERSEY CITY.

OFFICE—No. 16 WALL STREET, NEW YORK

mar16-1y.

THE WESTMORELAND COAL COMP'Y

OFFER THEIR SUPERIOR QUALITY OF

BITUMINOUS COAL

To Gas Companies,

Railroad Corporations,

And Manufacturers of

IRON AND STEEL.

More than two millions of tons of their Coal have been distributed through the New England and Middle States, and its character is established in the market as having no superior in quality.

PLACE OF SHIPMENT—Pier No. 3, Greenwich Wharves, Delaware River.

OFFICE—No. 230 South Third street, Philadelphia.

EDWARD C. BIDDLE, President.

FRANCIS H. JACKSON, Sec'y and Treas'r. Ap18:6mo.

IRON DEALERS.

LOVER LEAF PLANE IRONS.

MANUFACTURED EXCLUSIVELY BY US, UNDER

REYNOLDS' PATENTS

for tempering steel, possesses the following superior qualities:

1. They are tempered the same in the centre as at the edges.
2. They hold a fine cutlery temper until the iron is worn out.
3. There are no soft spots in them.
4. One of these Irons will outwear four to five Irons tempered the old way.
5. They are sold at the same price of other Irons.
6. Every Iron is warranted to possess the above qualities or no sale.

We hereby authorize all Hardware Dealers to allow their customers to try our Irons, and if not perfectly satisfactory, refund price paid and charge Irons back to us.

Every PLANE IRON made by us bears our

CLOVER LEAF TRADE MARK

REYNOLDS, BARBER & CO.,

STEEL TEMPERING WORKS,

mar21-3m-cow Auburn, N. Y.

SLATE DEALERS.

HUDSON RIVER SLATE COMPANY,

25 PARK ROW, NEW YORK,

Supply from their Quarries

SUPERIOR BLUE SLATE,

IN

ASHLER BUILDING FRONTS,
HOUSE TILES, of all sizes,
FLAGGING TILES, of any large size,
PLAIN FLAGGING of any thickness,
CURBING, plain and fancy,
COUNTERS & COUNTER TOPS,
WAINSCOTING & PANELING SLABS for MARBLEIZING, of any size ordered,
MANTLES & MANTLE STOCK,
SLABS of any dimensions,
HEARTHS, of all sizes,
SLATE DUST,
BILLIARD BEDS,
SILLS and LINTELS,
SINKS,
CEMENTERY STOCK,
SLAB ROOFING.

Any Articles Marbleized to Order in the Most Superior Style.

☞ All orders and communications should be addressed to

ABRAHAM BELL'S SON,

Nov 23,qx.m 25 Park Row, New York.

JOHN GALT,

WHOLESALE DEALER IN ROOFING SLATE.

SOLE AGENT FOR THE

EAGLE SLATE COMPANY OF VERMONT,

Who produce Purple, Green and Red ROOFING SLATE. Sole Agent for New York and the West for the

CHAPMAN SLATE COMPANY OF PENNSYLVANIA,

Who produce a Superior Black or Dark Blue Slate; also Sole Agent for New York and the West for the

LEHIGH SLATE COMPANY OF PENNSYLVANIA.

GENERAL DEPOT,

Cor. Tenth Avenue and Twelfth Street, N. Y. City.

Established in 1850.

BRANCH DEPOTS:

Buffalo: Jas. W. Chapman, Terrace Square.
Chicago: James Parker, corner Franklin and Washington Streets.
Charleston, S. C.: C. J. Demorest, East Bay, near Wentworth Street.
New Orleans: J. J. Lee, 368 Magazine Street.

☞ I am prepared to give parties the prices of Slate delivered throughout the United States at the Railroad Station.

Orders by mail will receive prompt attention. jan1:1y

MACHINERY, &c.

CAMPBELL, WHITTIER & CO.,

MANUFACTURERS OF

STEAM ENGINES, BOILERS, STAMP MILLS,

MINING MACHINERY,

and MACHINERY IN GENERAL.

Sole Agents and Manufacturers of

MILLER'S PATENT SAFETY ELEVATORS

For Factories, Stores, Machine Shops, Warehouses, Freight Depots, &c.

BOSTON, MASS.

J. RUSSELL CAMPBELL. CHARLES WHITTIER. HENRY H. M'BURNEY.

jan25:6m

WALTONS & LEONARD,

MACHINISTS' AND RAILROAD SUPPLIES,

METALS, TOOLS AND HARDWARE,

No. 58 John Street, New York.

AGENTS FOR THE SALE OF

American Bolt Co.'s Bolt, Nut Washers, &c.
Sturtevant, Pressure Blowers, Taft's Smith's Shears,
Facker's and Walworth's Ratchets, Harrington's Patent Tuyere,
Patent Differential Pulleys, Green Works, Patent Wrenches,
Dudgeon's Patent Hydraulic Jacks and Tube Expanders,
Dixon's Crucibles, Wellington Mills Emery and Emery Cloth,
Iron Pulley, Blocks, Twist Drills, Portable Forges, &c.

AND A LARGE ASSORTMENT OF

Stub's Tools and Files and Supplies for Railroads, Engineers, Manufacturers and Machinists.

W. M. WALTON. JOS. J. WALTON. O. W LEONARD.

dec12:1y

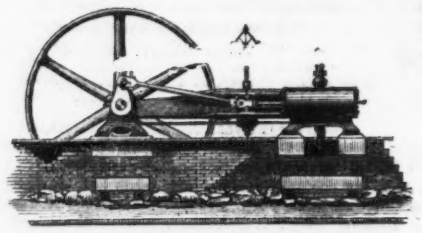
MACHINERY.

SOUTH BROOKLYN

Steam Engine and Boiler Works,

ON IMLAY, SUMMIT AND VAN BRUNT STREETS, BROOKLYN, N. Y

D. McLEOD, Proprietor



Manufactory of the

"Babcock & Wilcox Patent Steam Engines,"

high and low pressure, for Stationary and Marine purposes, up to the largest class. Orders for the above Engines, and for BOILERS, IRON and BRASS CASTINGS, COPPERSMITH WORK, FORGINGS and HEAVY MACHINERY of all descriptions (for which this establishment has unsurpassed facilities), executes promptly, at moderate prices.

The BABCOCK & WILCOX Patent Engines combine the simplest and most durable Valve Gear, the greatest range of cut off, perfect regularity of speed and the highest economy of fuel. The cylinders are jacketed with live steam, and all the parts are designed and constructed with reference to the greatest durability and smoothness of action. They are daily gaining in popularity, and are superseding the best cut-off Engines heretofore built, with a saving of from twenty-five to forty per cent. in fuel.

Send for circulars, containing full description. Address

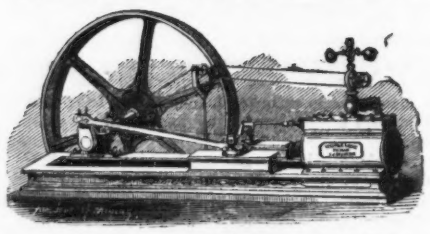
D. McLEOD, Box 2993 New York P. O.,

doc27.67:1y Or at the Works in Brooklyn

TODD & RAFFERTY,

GENERAL

Machinery Merchants, Engineers and Machinists.



Manufacturers of Stationary and Portable Steam Engines and Boilers; also Flax, Hemp, Tow, Oakum, and

ROPE MACHINERY, MILL GEARING, SHAFTING,

Lathes, Planers, Drills, Chucks, &c., Iron and Brass Castings. Judson's & Snow's Patent Governors constantly on hand.

OFFICE AND WAREROOMS, NO. 4 DEY ST, N. Y.

Office and Works, Paterson, N. J.

JOSEPH C. TODD, ap27:1y PHILIP RAFFERTY.

PORTABLE AND STATIONARY

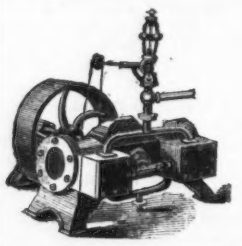
STEAM ENGINES.

Boilers, Circular Saw Mills, Mill Work, Cotton Gins, Cotton Gin Materials,

Manufactured by the

ALBERTSON & DOUGLASS MACHINE COMPANY,

NEW LONDON, CONN. mar16:1y



ALL IN SEARCH OF ENGINES SHOULD EXAMINE

"THE RUDDICK,"

The most compact, simplest and CHEAPEST

in the world.

DEVEREUX, THOMPSON & CO.

82 Cedar Street, N Y.,

or

A. F. DEVEREUX & Co, Boston,

Sole Manufacturers.

nov29:1y

No Experiment. Old approved methods in all its parts.

THE WATSON MANUFACTURING COMPANY.

RAILROAD AVENUE, OPPOSITE ERIE RAILWAY STATION,

MACHINISTS AND MILLWRIGHTS,

PATERSON, N. J.

Water Wheels, Heavy Gearing, Shafting, Pullies, etc

ALSO, PORTABLE ENGINES,

And all kinds of Machinery for Oil Wheels, etc.

Rolling Mills, Steam Engines, Hydraulic and other Presses,

LATHES, PLANING AND SCREWING MACHINES,

And Tools in general. Iron and Brass Castings, of all sizes and descriptions Patterns made to order. Also, manufacturers of the

Improved Turbine Water Wheel.

oct.12, 67-1 y.

PORTABLE STEAM ENGINES,

COMBINING THE MAXIMUM OF

EFFICIENCY, DURABILITY AND ECONOMY,

with the minimum of weight and price. They are widely and favorably known, more than SIX HUNDRED being in use. All warranted satisfactory, or no sale Descriptive circulars sent on application. Address

may10-67:6m J. C. HOADLEY & Co., Lawrence, Mass.

THE NOVELTY IRON WORKS.

Foot East 13th, 13th and 14th Streets.

BRANCH OFFICE.....79 Liberty street,

MANUFACTURE

Steam Engines and Boilers,

Cotton, Sugar and Rice Machinery,

of the most improved kinds All kinds of

Brass and Copper Work,

Indicators, Clocks, Steam Gauges,

Gauge Cocks, &c.

Large stock of patterns of SPUR, BEVEL and MITRE WHEELS, PULLIES, and all sorts of MILL WORK, feb1:1y

MISCELLANEOUS.

STEPHEN J. GEOGHEGAN & CO.

(Successors to Cameron & Geoghegan,)
199 & 201 Centre Street, N.Y.,
Adjoining Earle's Hotel.
MANUFACTURERS AND DEALERS IN
Wrought and Cast Iron Steam Pipes, Valves, Cocks, Fittings, &c.
FOR STEAM, WATER, AND GAS.
Also,
High and Low Pressure Steam Heating Apparatus applied to
FACTORIES, PUBLIC BUILDINGS, STORES AND DWELLINGS.
Manufacturers and Sole Agents for
STORER'S PATENT LUBRICATORS,
for supplying lubricating matter in bulk to the cylinders of Marine and Stationery Steam Engines, Steam Pumps, Heaters, Steam Traps, Pipe Tongs, Pipes, Vices, Stocks and Dyes, &c., &c.
We make Steam and Gas Fitter's tools a speciality.
Coils for Breweries, Distilleries, Soap Factories, &c., &c
STEAM PUMPS.
Send for Illustrated Circular. f:17-1y

SUBSCRIBE FOR AND ADVERTISE IN THE
AMERICAN JOURNAL OF MINING,
THE BEST AND LARGEST PAPER OF THE KIND IN THE UNITED STATES,
NOW IN ITS THIRD YEAR.

The AMERICAN JOURNAL OF MINING is the only paper in the United States that represents *all* the various mining interests of the country in a complete, satisfactory, and trustworthy manner. It should therefore be in the hands of *every one* who desires to be informed upon, and hence able to profit by a knowledge of the subjects of which it treats, viz.: our vast mineral resources, and the best methods, direct and indirect, by means of which they may become an unfailing source of individual and national wealth.
Published every Saturday in New York City. Only $4 a year.

SPECIAL AGENTS AUTHORIZED TO RECEIVE SUBSCRIPTIONS AND ADVERTISEMENTS.
MASSACHUSETTS.—M. A. LATHROP & BRO. 11 Court street, Boston.
MICHIGAN—J. W. CROZER, Ontodagon.
MONTANA.—WILLIAM Y. LOVELL, Virginia City.
NEVADA.—J. D. EMERSLEY, Austin.
COLORADO—GEO. TRITCH, Denver City.
CALIFORNIA.—W. E. LOOMIS, San Francisco.
PENNSYLVANIA.—T. R CALLENDER, cor. 3rd and Walnut streets, Philadelphia, W. H. DAVIS, Easton, Pa.
ENGLAND.—FREDERICK ALGAR, 11 Clements Lane, Lombard street, London.
MEXICO.—JAMES SULLIVAN, City of Mexico, JUAN CARREDANO, Vera Cruz, JACINTO QUIROS, Acapulco.
SOUTH AMERICA.—COLVILLE DAWSON & Co., 271 Calle de la Union, Lima, Peru. M. NAVARRO DE VILLALBA, Rio de Janeiro, Brazil, LUCIEN HUO, Buenos Ayres, Argentine Republic.
CUBA.—THOS. W. WILSON, Havana.
Mr. T. P. PEMBERTON is editor of the Mechanical Department and agent for the AMERICAN JOURNAL OF MINING.
DEALERS AGENTS.
THE AMERICAN NEWS COMPANY, 121 Nassau street, N. Y
THE NEW YORK NEWS CO., 10 Spruce street, N. Y.

W. D. ANDREWS & BRO., 414 WATER ST., NEW YORK
Manufacturers of Andrews' Patent
OSCILLATING ENGINES,
CENTRIFUGAL PUMPS, AND TUBULAR BOILERS.
Our ENGINES occupy little room, are light, simple, cheap, and economical require no special foundation or balance-wheel pit, and can be run from **150** to **500** revolutions per minute with Safety. Sizes from **1-2** Horse to **250** Horse-Power.
Our CENTRIFUGAL PUMPS pass mud, sand, coal, corn, gravel, etc., without injury, and use little power. Sizes from **90** Gallons to **40,000** Gallons per minute capacity. For sewers, canals, cofter dams, condensers, irrigation, and wrecking, they are unequaled.
Our BOILERS are light, strong, and portable, are economical of fuel, burn Wood, Hard or Soft Coal, and CONSUME THE SMOKE. Sizes from **2** to **50** Horse-power.
Awarded First Premiums at the recent Fair of the American Institute—a gold medal to each.
Portables from **2** to **20** Horse-Power. Send for descriptive pamphlets and price-lists Julv1 up.q

FRANK B. POLLEY & CO.,
ENGINEERS AND MACHINISTS,
277 & 279 First street, Brooklyn, New York.
Manufacturer of
HIGH AND LOW PRESSURE STEAM ENGINES,
PORTABLE AND HOISTING ENGINES,
Also,
ROSS PATENT BURR STONE GRINDING MILL.
FRANK B. POLLEY. EDWD. W. CLARKSON,
Send for Circular. jan2:1y.q

CLINTON IRON FOUNDRY,
502 and 504 WATER, and 239 and 241 CHERRY STREETS,
Between Pike and Rutgers Slips, New York.
LEADER PIPES,
PULLYS, HANGERS,
GRATE BARS,
MACHINERY PATTERNS of all kinds,
Also,
LOAM AND DRY SAND CASTINGS
of every description, for mining purposes, made to order at the shortest notice and on reasonable terms.
W. McKINLEY. oct 26-6m R SMACK.

ATLANTIC
STEAM ENGINE WORKS,
IRON AND BRASS FOUNDERS.
MANUFACTURERS OF
Steam Engines, Boilers, Sugar Mills, Tanks, Linseed and Cotton seed Oil Presses, and Machinery used in the Arts and Manufactures.
CORNER WATER AND ADAMS STREETS, BROOKLYN, N. Y.
R. B. DUYCKINCK, Treas. jan13:1y **WM. ARTHUR, Pres.**

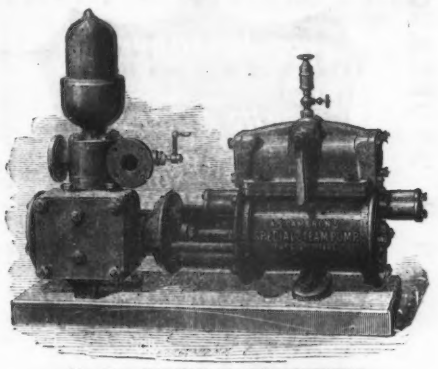
BULLARD & PARSONS,
HARTFORD, CONN.,
Manufacturers of
IMPROVED UPRIGHT DRILLS,
with friction feed. This tool can be used with equal facility for light drilling or heavy boring—is particularly adapted to railroad, locomotive, steam engine, and general machine shops. We also make first class Shafting, and Mill Work, from a great variety of new and improved patterns. We furnish with our shafting, patent self-oiling boxes and friction couplings. Special machinery to order. Send for cuts and price list July 6qp a. 6t.

ATTENTION, ENGINEERS, MINERS, QUARRYMEN. LAMSON'S PATENT STONE CHANNELING MACHINE, for quarrying Marble, Slate, Grindstone, Sandstone, and other rocks: does the work of 75 to 100 men per day; can be seen in the quarries at Rutland, Vt., or at the Company's works.
CASE'S PATENT DIAMOND ROCK DRILL; is pointed with black diamonds; is adjusted and operated by one man; bores in any direction, or under water; bores in Marble 8 inches, in Granite 5 inches, in Quartz 3 inches, in Talc 6 inches per minute. One drill-head has bored over 2,000 feet without repair, and is still perfect. Address THE WINDSOR M'F'G CO., Windsor, Vt. Arrangements made for manufacturing any new Patent Machines. apl18-6m

INCRUSTATION OF STEAM BOILERS PREVENTED
by WINANS' BOILER POWDER, 11 Wall street, New York
T. S. POST & Co., Benham, Texas, say: "We were burning *two* cords of wood daily; put in a dose of Winans' Powder, and found less fuel necessary each day, until at the end of the week we used less than *one* cord per day, and had better steam than formerly. This may seem incredible to those who have not used these Powders, but we are willing to make oath to the fact. We would not be without the article for ten times its value." mar.21 :tf.

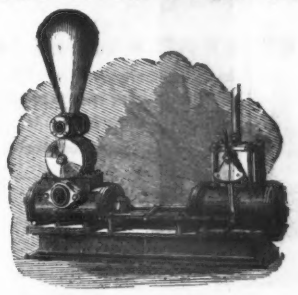
STEAM PUMPS.

STEAM PUMPS IN EVERY POSSIBLE VARIETY.



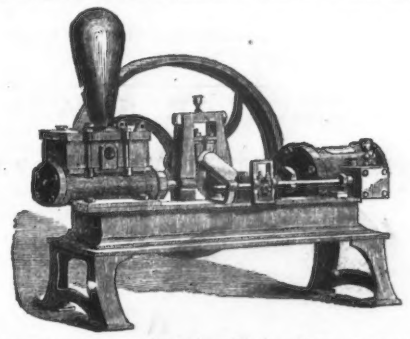
A. S. CAMERON & CO.,
22ND STREET, CORNER OF 2ND AVENUE, N. Y.
feb22 6m

NIAGARA STEAM PUMP WORKS
First Premium AT FAIR. American Institute. 1867.



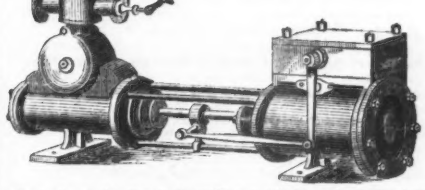
HARDICK BROTHERS,
SUCCESSORS TO
CAMPBELL & HARDICK, BROTHERS,
No. 9 ADAMS STREET, BROOKLYN, N. Y.
Send for circular. f 13-6m

J. CLAYTON'S
Patent Steam Pumps,
HAND PUMP AND STEAM ENGINE COMBINED.



These pumps contain every desirable quality in a steam pump, are made of the best material, and in the best manner, and are the cheapest first-class pumps in the market. For cut and description see JOURNAL OF MINING, No. 18 Vol. I. Please send for circular.
All sizes of pumps made to order at the shortest notice.
nov18:tf JAMES CLAYTON, 102 Front street, Brooklyn, N. Y.

CUILD & CARRISON,
Manufacturers of
Steam Pumps, Steam Engines, Vacuum Pumps and Vacuum Pans.
Send for Illustrated Catalogue.



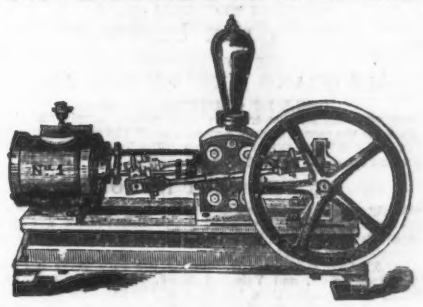
For sale at the STEAM PUMP WORKS, 26, 28 and 30 First street, Williamsburgh, N. Y. jan1-6m

ROTARY ENGINE AND PUMP Co.

METROPOLITAN PATENT
The best and most effective Steam and Belt Pump adapted for general use. Warranted to form a vacuum of 28 inches. Mine owners should call and examine it as a MINING PUMP.
Offices of the Company, No. 181 PEARL STREET, Room 10, and No. 14 Second Avenue. Send for Circular. june 18-1y

STEAM PUMPS.

THE WOODWARD
STEAM PUMP MANUFACTURING COMPANY,
MANUFACTURERS OF THE
WOODWARD PATENT IMPROVED SAFETY



STEAM PUMP AND FIRE ENGINE.
STEAM, WATER, AND GAS FITTINGS OF ALL KINDS.
Also, dealers in WROUGHT IRON PIPE, BOILER TUBES, etc. Hotels, Churches, Factories and Public Buildings, Heated by Steam. Low Pressure.
Woodward Building, 76 and 78 Centre street, corner of Worth street, New York. Formerly of 77 Beekman street.
m14:1y GEO. M. WOODWARD, President.

HYDRAULIC WORKS,
MANUFACTORY,
BROOKLYN, N. Y
Steam Pumping Engines, Single and Duplex, Worthington's Patent, for all purposes, such as Water Works Engines, Condensing or Non-condensing: Air and Circulating Pumps, for Marine Engines; Blowing Engines; Vacuum Pumps Stationary and Portable Steam Fire Engines Boiler Feed Pumps, Wrecking Pumps,
Mining Pumps,
Water Meters, Oil Meters; Water Pressure Engines; Stamp Mills for Gold, Silver and Copper Ore; Eaton's Patent Amalgamators for Gold and Silver Steam and Gas Pipe, Valves, Fittings, &c.; Iron and Brass Castings.
Send for Circular. E. R. WORTHINGTON,
Feb1:1y 61 Beekman street, New York.

THE
POSITIVE STEAM PUMP,
WILLIAM HARSEN,
PATENTEE AND MANUFACTURER, GREENPOINT, L. I.
Costs one-third less than any other First-Class Pump of the same Capacity!
Send for Circular to
J. W. COLE,
MANUFACTURER'S AGENT, at CARR'S, 45 Courtland Street,
nov2 1y q

IVES' PATENT LAMPS,
Give a better and cheaper light than GAS, can be lighted, filled, and trimmed without removing shade, globe or chimney, or unscrewing the burner. We make a specialty of furnishing
SAFE STATIONARY LIGHTS
(in place of those that are movable and dangerous)
AND
PURE, NON-EXPLOSIVE OIL,
In place of bad, unsafe Kerosene commonly used.
Every barrel received from us, with our brand on the head, can be relied on as
PERFECTLY SAFE.
Present price (in barrels), 76 cents per gallon.
Shipped in "hermetically tight" barrels of 44 to 48 gallons, ONLY on receipt of
CASH, WITH THE ORDER.
JULIUS IVES & CO.,
mar7:3m No. 49 Maiden Lane, N. Y.

GUNPOWDER SUPERSEDED.
Explosions and accidents from this time counted among the things that were Quarrymen and miners, hunters and soldiers use only
NEUMEYER'S PATENT SAFETY POWDER.
Now in universal use for blasting and mining purposes in England, France and Germany. You can handle and ship this powder with no more danger than you handle oil, sulphur, or charcoal. To explode it has to be confined and ignited by means of a fuse. One feature that specially recommends its use in mines and confined places is that very little smoke results from its combustion, and this smoke is very light, and not at all injurious to the lungs.
NEUMEYER & NIESE, ST. LOUIS, MO.,
Are the Patentees and sole manufacturers for the United States One general agent wanted for each State. For further particulars address.
NEUMEYER & NIESE,
july67 67 No. 9 South Third street, St. Louis.

B. KREISCHER,
NEW YORK FIRE BRICK
AND
Staten Island
CLAY RETORT WORKS.
ESTABLISHED 1845.
OFFICE, 58 GOERCK STREET,
CORNER DELANCEY ST., EAST RIVER,
mar28:1y:q **NEW YORK.**

SCOVILL MANUFACTURING COMPANY.
MANUFACTURERS OF
SHEET BRASS, GERMAN SILVER,
PLATED METAL, BRASS BUTT HINGES,
Gilt, Lasting, Brocade and Fancy Dress Buttons, Kerosene Oil Burners, and Lamp Trimmings,
And Importers and Dealers in every description of
PHOTOGRAPHIC GOODS,
No. 4 Beekman street and 36 Park Row, New York.
Manufactory, Waterbury, Ct. mar.21 :6m.

E. & H. T. ANTHONY & CO.,
501 Broadway, New York.
Manufacturers of Photographic Materials and Albums,
EXTENSIVE DEALERS IN AND MANUFACTURERS OF STEREOSCOPES AND VIEWS.
Feb 1.1y

OTIS, BROTHERS & CO.,
SAFETY HOISTING MACHINERY,
feb15:6m 309 BROADWAY, N. Y. CITY.

MISCELLANEOUS.

550 MILES
OF THE
UNION PACIFIC RAILROAD
RUNNING WEST FROM OMAHA
ACROSS THE CONTINENT,
ARE NOW FINISHED.
WHOLE GRAND LINE TO THE PACIFIC
WILL BE COMPLETED IN 1870.

The means provided for construction have proved ample, and there is no lack of funds for the most vigorous prosecution of the enterprise. The Company's FIRST MORTGAGE BONDS, payable PRINCIPAL AND INTEREST, IN GOLD, are now offered at PAR. They pay

SIX PER CENT IN GOLD,

and have thirty years to run before maturing. Subscriptions will be received in New York at the COMPANY'S OFFICE, No. 20 Nassau street, and by JOHN J. CISCO & SON, Bankers, No. 59 Wall street, and by the Company's advertised Agents throughout the United States.

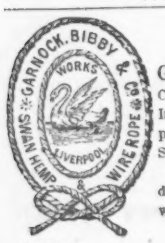
A PAMPHLET AND MAP for 1868, showing the Progress of the Work, Resources for Construction, and Value of Bonds, may be obtained at the Company's Offices or of its advertised Agents, or will be sent free on application.

JOHN J. CISCO, Treasurer, New York.
April 10, 1868. ap.25;6t

BUSH & GANT,
Wholesale and Retail Dealers in
HOUSE FURNISHING GOODS,
BUILDERS' HARDWARE,
WOOD, WILLOW, BRITTANIA AND PLATED WARE.
ALSO,
Universal Patent Wringers, Washing Machines,
PATENT BIRD AND ANIMAL CAGES, METAL TOP CHIMNEYS, AND SHINGLE BRACKETS.
N. P. BUSH,
P. O. Box, 5,969. B. E. GANT.
feb1:tf 429 Sixth Ave. Cor. 26th street.

TERWILLIGER & CO.,
MANUFACTURERS OF THE
IMPROVED TRIPLE FLANGE
Fire and Burglar Proof Safes,
With Combination and Powder-proof locks, warranted free from dampness.
VAULT DOORS AND BANKERS' SAFES
Made to order of our Patent welded Steel and Iron, and sold subject to test.
WARRANTED THE BEST IN THE WORLD.
Please call or send for illustrated catalogue.
TERWILLIGER & CO.,
PRINCIPAL DEPOT, 100 MAIDEN LANE, NEW YORK. feb 223m

M. BOTTICHER'S
PATENT ADJUSTABLE PRESSURE AND VACUUM
EAGLE GAUGE,
Can be furnished from 10 to 600 pounds pressure. The most simple and reliable Gauge in use.
Every Gauge warranted to give satisfaction. State rights for sale
Address, M. BOTTICHER,
nov 14;1y;q 264 Broad street, cor. Bank, Newark, N. J.



WIRE ROPE.
The Subscribers, agents for
GARNOCK, BIBBY & CO.'S
Celebrated Steel and Charcoal Wire Rope, for Mines, Inclined Planes, Bridges, Derricks, and Hoisting Purposes. Also Galvanized Charcoal and B. B. Rope for Ships' Standing Rigging, Stays, Guys, &c.
A large stock constantly on hand. Orders filled with dispatch. For further particulars as to price, test weight and working strain, apply for Mining Circular to
JOHN W MASON & CO.,
june29:1y 43 Broadway, N. Y

LINDSAY'S PATENT.

The merits of this Wrench are too well known to need comment Go to the nearest hardware store and LOOK AT IT BEFORE PURCHASING ANY OTHER, or send for illustrated circular to
MANVEL & LINDSAY,
oct12;1y New York.

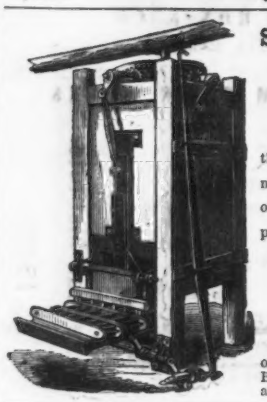
IRON & WOOD WORKING MACHINERY
TURBINE WATER-WHEELS.
LUCIUS W. POND,
No, 98 LIBERTY ST. N. Y., and Worcester, Mass.
nov.2.1y.q

McNAB & HARLIN,
MANUFACTURERS OF
BRASS COCKS,
PLUMBERS' BRASS WORK,
WROUGHT IRON PIPE, FITTINGS, &c.
No. 86 John street, New York. Ap18:6m.

FILE-COVERS. FILE-COVERS.
FILE-COVERS. FILE-COVERS.
FILE-COVERS. FILE-COVERS.
For preserving the numbers of the AMERICAN JOURNAL OF MINING. Price $2.
For sale by WESTERN & CO., 37 Park Row, N.Y.

IMPORTANT TO MINERS.
Every description of Analysis and Assays carefully attended to, and returns promptly made, by
WESTERN & COMPANY,
No. 37 Park Row, New York City.

JOHN P. GRUBER'S
LATEST IMPROVED PATENTS
FOR
WATER WORKS & FILTERING APPARATUS
AIR PUMPS
FOR
ALE, LAGER BEER WINE ETC.
ROTARY PUMPS
FOR
BREWERIES, SHIPS, ETC
ALL KINDS OF SCALES
FOR BANKERS, BROKERS, JEWELLERS ASSAYERS, DRUGGISTS, GROCERS, ETC
ALL KINDS OF WEIGHTS.
182, 184, 186 and 188 Chatham Square, Corner Mott Street, NEW YORK
may16:6m


STAR BRICK MACHINE
The best, strongest and cheapest in the United States. We warrant it to make more and better Bricks than any other Machine now in use. It takes less power and help to run it.
Manufactured and sold by
JAMES MARTIN,
No. 160 Washington street, Jersey City, N. J.
or, J. H. Rennick, Room 28, No. 71 Broadway.
aug3;1y

IRON AND STEEL WIRE ROPE.
MANUFACTURED BY
JOHN A. ROEBLING,
TRENTON, N. J.
FOR
INCLINED PLANES, MINING,
STANDING SHIP RIGGING,
SUSPENSION BRIDGES, FERRIES,
STAYS AND GUYS ON DERRICKS,
CRANES & SHEARS, ELEVATORS,
TILLERS, &c
A large stock of Wire Rope constantly on hand Orders filled with dispatch.
☞ For strength, size and cost see circular, which will be sent on application. nov3:67 tf

CIRCULAR SAWS
WITH
EMERSON'S PATENT MOVABLE TEETH.

These saws are meeting with unprecedented success, and their great superiority over every other kind, both as to efficiency and economy is now fully established,
ALSO,
EMERSON'S
PATENT PERFORATED
Circular,
and Long Saws.
(All Gumming avoided.) And
Emerson's Patent Adjustable Swage,
for Spreading, Sharpening, and Shaping the teeth of all Splitting Saws. Price $5. Manufactured by the AMERICAN SAW COMPANY,
Office No. 2 Jacob Street, near Ferry Street, New York.
Send for new Descriptive Pamphlet and Price List 1v4-ps

ARION PIANO-FORTE.—PATENTED.
Pre-eminently the best Piano ever constructed, unrivalled for tone, durability and elegance of finish. The Brooklyn Daily Times says: "It has in higher degree than any Piano that we have met with, the singing quality or character that musicians so much admire and seek for in a Piano; the bass notes reminding you of the deep-toned notes of a large organ. The middle octaves are more elastic and clear than in most other Pianos, while the upper or treble notes possess that pure, distinct, bell-like clearness that is so necessary to the correct rendering of difficult pieces of music, and that also lends such a charm to melody." Professor J. M. Abbott, organist of the Church of Our Saviour, in Brooklyn, says: "For elasticity of touch, for the singing quality so much sought for by artists, and for richness and purity of tone, it is unexcelled by any Piano I have ever used." Professor John W. Henry Canoll, editor of the American Educational Monthly, says: "* * *. Listen, however, to one of another class, for example, one of the Arion Pianos, made by Manner & Co.; bow your head as the bass sends forth its riches, clear and unblurred; observe the singing, swelling melody that in its middle octaves so wondrously represents vocal expression, and which predominates above even the silvery brilliancy of the upper treble; then reflect that this is a scientifically constructed and durable instrument." * * *
Is for sale at the Manufactory and Warerooms, 187 and 189 Bowery, second door above Delancey street. MANNER & CO.
N. B.—We have a number of Second Hand Pianos to sell or rent. 12-v-4:qp

DUNCAN, SHERMAN & CO.,
BANKERS,
CORNER PINE AND NASSAU STREETS, N. Y.
ISSUE CIRCULAR NOTES AND LETTERS OF CREDIT FOR TRAVELLERS, AVAILABLE IN ALL THE PRINCIPAL CITIES OF THE WORLD,
MERCANTILE CREDITS
For Use in Europe, China, etc. Also Make
Transfers of Money to Europe and Pacific Coast by Telegraph.
feb3;1t INTEREST ALLOWED ON DEPOSITS.

EVANS & GOULD,
PLAIN AND FANCY
BOOKBINDERS & PRINTERS,
117 and 119 Third Avenue,
Northeast corner 14th street, may16:2m NEW YORK.

ROOT'S WROUGHT IRON SECTIONAL
SAFETY BOILER.
Has no large sheet iron shell to explode, is composed entirely of wrought iron tubes tested to 300 pounds, water and steam inside of them, offers
POSITIVE SAFETY FROM DESTRUCTIVE EXPLOSION.
Great economy of fuel over other boilers replaced by it,
DURABILITY,
COMPACTNESS,
SIMPLICITY,
GREAT FACILITY FOR EXAMINATION, CLEANING AND RENEWAL,
FREEDOM FROM SCALE AND CORROSION,
HAS NO JOINTS IN THE FIRE,
Lightness, hence low freights, largest Boilers equal in strength to smallest, as parts are uniform in size and strength, and very light, hence largest boilers can be erected in most inaccessible locations, and transported on mules for
MOUNTAIN AND MINING OPERATIONS.
No special skill required in erection or operation, lower cost for setting and reasonable price. Pamphlets, price lists, &c., mailed. Also,
ROOT'S TRUNK ENGINES,
Hoisting Machinery, Steam Pumps, &c.
JOHN B. ROOT,
ROOT STEAM ENGINE WORKS,
ap4:3m Second avenue, corner 28th street, N. Y.

NEW YORK BELTING AND PACKING COMPANY,
MANUFACTURERS OF
VULCANIZED RUBBER FABRICS,
ADAPTED TO MECHANICAL PURPOSES.
Patent Smooth Belting, (Patented Nov. 22, 1859,) vulcanized between layers of a patent metallic alloy, by which the stretch is entirely taken out, the surface made perfectly smooth, and the substance thoroughly and evenly vulcanized. This is the only process that will make reliable Rubber Belting
Hose never needs oiling, and warranted to stand any required pressure
Steam Packing in every variety, and warranted to stand 300° of heat.
Solid Emery Vulcanite.—Wheels made of this are solid, and resemble stone or iron; will wear out hundreds of the ordinary wheels.
Directions, Prices, etc., can be obtained by mail or otherwise.
15-4 -qp JOHN H. CHEEVER, Treasurer
Warehouse, 37 & 38 Park Row, N. Y.

JOHN WATERS' SONS,
GOLD AND SILVER REFINERS
AND
ASSAYERS.
ESTABLISHED 1839.
No. 57 VESEY STREET, NEW YORK.
ANALYSES MADE OF ORES, MINERALS, ETC.,
BY FIRE.
Lead and Copper Ores a Specialty.
Miners are assured of careful and accurate assays.
Gold Dust and Bars Purchased. mar9:3m

Montana Mining Agency.
WM. Y. LOVELL. JAS. GOSTLING.
We buy and sell every description of mining property in this Territory, examine and report upon mines, adjust mining accounts, procure U. S. Patents for mining property, examine Titles.
Specimens from any Lode, or Cabinets of the Minerals of this Territory, sent by express to any address.
Charges moderate.
LOVELL & GOSTLING,
ap11:6m Box 200 Virginia City, M. T.

E. SEARS' WOOD ENGRAVING ESTABLISHMENT.
ENGRAVING, DESIGNING AND PHOTOGRAPHING on Wood, in all its branches, viz.: Portraits, Fine Book Work, Machinery, Maps, Buildings, Illustrated Catalogues, Views, &c. N. B special attention given to Color Work of all descriptions. 48 BEEKMAN STREET, New York. aug14;1y

THE ANNUAL OF SCIENTIFIC DISCOVERY.
THE ANNUAL OF SCIENTIFIC DISCOVERY.
THE ANNUAL OF SCIENTIFIC DISCOVERY.
THE ANNUAL OF SCIENTIFIC DISCOVERY.
FOR 1868.
For sale by WESTERN & CO. Sent on receipt of price, TWO DOLLARS.

Ten Eyck Axe Manufacturing Co.,
MANUFACTURERS OF WARRANTED
CAST STEEL EXCELSIOR AXES,
Picks, Hatchets, and Mining Tools of all Descriptions
FACTORY, COHOES, N.Y.
THOMAS E. GAYNOR, Agent,
jan18:6m 57 Beekman street, N. Y.

WATER-PROOF SAFETY FUSE.
Warranted Sure Fire if not Cut in Tamping.
MANUFACTURED BY
UREN, DUNSTONE & BLIGHT,
EAGLE RIVER, KEEWENAW CO., (L. S.) MICHIGAN.
MINERS TRY IT! All we ask is A FAIR FIELD AND NO FAVOR. nov 13-1y-4p

T. H. McALLISTER'S
HOUSEHOLD MICROSCOPE.
Magnifying powers from twenty to one hundred diameters (400 to 10,000 times the area), with all the essential parts of a first class instrument.
Price of the microscope with a collection of forty-eight Prepared Objects of Natural History, $10.
T. H. McALLISTER, Optician,
May2 No. 49 Nassau street, New York.

NEW AGENCY.—MESSRS. M. A. LATHROP & BRO. have been appointed our sole agents in the New England States for the AMERICAN JOURNAL OF MINING and our new Spanish paper EL CORREO HISPANO-AMERICANO. Their address is 11 Court street, Boston, Mass., where all information respecting communications, subscriptions and advertisements for these papers will be gladly given to those who may wish to favor us with their patronage.

PLATINUM APPARATUS, SHEET, WIRE, etc., for all Laboratory and Manufacturing purposes. Platinum scrap and ore purchased. H. M. RAYNOR,
Office, No. 748 Broadway, N. Y.

PUBLICATIONS.

THE NEW YORK EXPRESS FOR 1868,

And Campaign Weekly Express.

SEND FOR SPECIMEN COPY AND PROSPECTUS.

To the Friends of the N. Y. Express:

We solicit from our friends, personal and political, a continued interest in the EXPRESS and its respective publications—Daily, Semi-Weekly, and Weekly. It is nearly thirty-one years since the DAILY EXPRESS commenced in this city with its present proprietors, and in all that time it has been earnestly devoted to the Union and Equality of the States, the rights of the people, a Constitutional Government, the maintenance of Law and Order, the Diffusion of Knowledge, and to whatever would secure the greatest good to the greatest number of people. Our Platform is the same to-day on all these points of National interest as in 1836, and through all Administrations, from that time to the present. Nor is it likely that time will change it while we live and the Government endures, inasmuch as we believe in what is tried and good, rather in that which is vacillating and revolutionary.

To that portion of the people, therefore, who believe in a stable government, good men, good laws, and equal and exact justice, we shall continue to appeal for that measure of public favor which is due to the principles we avow.

The year 1868 will be the most important in the history of the Government. It will test the right of the white race to rule the country, and whether the American people have the power to resist the purposes of a Jacobin and lawless Congress to give the negro supreme control over nearly one-third of the States and millions of people. This issue is to be decided at the Presidential election in 1868, and we invoke the aid of all who believe in the Government of the Fathers and in the supremacy of the white race.

The EXPRESS we shall aim to make more and more, in all its departments, a thorough National and Local Newspaper—a Home Journal for the Family—a Political Newspaper for the Politician—a Financial and Business Journal for the Banker and man of business. For the rest, in the future, as in the past, the EXPRESS must speak for itself.

The EVENING EXPRESS having the largest circulation of any established evening paper in the State or City, is especially worthy of the attention of all classes of advertisers in their respective departments of trade.

TERMS:

THE EVENING EXPRESS.

Single Copy	4 cents
City Subscribers, served by Carriers	24 cts. per week
Mail Subscribers, one year	$9 50
Six Months	5 00
Price to Newsdealers	$3 per 100

THE SEMI-WEEKLY EXPRESS.

One Copy, one year (104 issues)	$4 00
Six Months	2 00
Two Copies, one year	7 00
Five Copies, one year	15 00
Ten Copies, one year	28 00
Twenty-five Copies, to one address	50 00

An extra copy will be sent to any person who sends us a club of ten or over.

WEEKEY EXPRESS.

One Copy, one year (52 issues)	$2 00
Six Months	1 25
Three Copies, one year	5 00
Five Copies, one year	8 00
Ten Copies, one year	15 00
Fifty Copies, to one address	50 00

An extra copy will be sent to any person who sends us a club of ten or over.

To clergymen the WEEKLY will be sent for $1 50 per annum.

Four editions of the EVENING EXPRESS are published, 1:30, 2:30, 3:30, and 5 o'clock.

With the Latest, Political, Commercial and Marine News.

The Latest Law Reports, and with the very latest news from the adjoining Cities, States, and all the States of the Union.

Also, a complete daily record of Stocks, and the Money Market to the last hour.

We particularly call the attention of Farmers and Merchants, in all parts of the country, to our Local Market and Business Reports, which are now very complete.

The Semi-Weekly and Weekly Editions will have all the news of the week up to the hour of going to press.

We have also made arrangements to club the EXPRESS with the AMERICAN AGRICULTURIST, a monthly paper devoted to Agriculture; THE RIVERSIDE MAGAZINE, for Young Folks; THE PHRENOLOGICAL JOURNAL, and the PEOPLE'S MAGAZINE, thus offering to our subscribers a great variety of choice reading at very favorable terms.

☞ Remit by draft, Post-Office Money Order or Registered Letter, otherwise we cannot be responsible.

Subscribers are in all cases requested to send to the office direct. We have no agents, and none should be waited for—to call.

Specimen copies sent free upon application, and as many as may be wanted.

READ—SUBSCRIBE—CIRCULATE.

PRESIDENTIAL CAMPAIGN, 1868.

The importance of the crisis of 1868 to the saving of the Government of our fathers—the re-establishment of the Constitution and restoration of the Union, and the necessity of a more healthful and steady business to the people, demands of all Democrats and conservative citizens and people in the country, some efforts to counteract the immense exertions of those who are using the spoils of office and fortunes acquired by war, to maintain the present disorganized state of the country. In view of the present exigency of public affairs, and in order to spread political information as widely as possible, and at the mere cost of paper, during the coming campaign, at the solicitation of friends in the State and country, we now offer the following premiums to agents:

Clubs of 25	Weeklies at $1 per c.	$5
" 50	"	10
" 100	"	20
" 15	Semi-Weeklies at $2	5
" 25	"	10
" 50	"	20
" 5	Dailies at $9 50	8
" 10	"	10

These premiums will be paid for all clubs sent us from this date until May 1st. We hope at least to add ten thousand to our list of weekly subscribers between this time and the Democratic nomination on the 4th of July.

ap.18:3m J. & E. BROOKS, Proprietors.

THE PROTESTANT CHURCHMAN,

A Religious Family Paper,

THE LEADING EVANGELICAL ORGAN

IN THE

PROTESTANT EPISCOPAL CHURCH.

Devoted to the advocacy of Evangelical Truth against Ritualism and Rationalism; the defence of the "Liberty of Preaching," and the cultivation of fraternal relations with Evangelical churches.

Editors: Rev. Messrs. John Cotton Smith, D.D., Marshall B. Smith, and Stephen H. Tyng, Jr.

The Editors are assisted by a large corps of clerical and lay contributors in all parts of the United States, in England, and on the Continent.

Published every Thursday at No. 633 Broadway, New York.

TERMS: Four Dollars per annum; to clergymen, three dollars; to theological students and missionaries, two dollars. Club rates, five copies to one address, fifteen dollars; twenty copies, fifty dollars.

☞ Specimen copies furnished. Address,

THE PROTESTANT CHURCHMAN,

Ap.18:6m Box 6,009 P. O., N. Y.

THE CHURCH UNION.

"The Freest Organ of Thought in the World."

☞ The largest Religious Paper in the World, averaging Nine columns of reading matter each week more than any other competitor.

It aims to *lead* public opinion upon all subjects, and to represent or echo the sentiments of no party or sect. Edited by seven editors, from seven different denominations, whose names are not known even to each other.

☞ Terms, per year, - - - - - - - - - $2 50

☞ Terms to Agents (for each subscriber) - - - - - $1 00

PREMIUMS.

A SEWING-MACHINE, worth $55, for twenty-five subscribers and $62 50. Agents may choose their machines.

WEBSTER'S DICTIONARY, for $25 and ten names.

"ECCE ECOLESIA," for two names.

A GOLD WATCH, American Watch Co., worth $125, for eighty-five names. Silver Watch, for twenty names; Silver Watch for fifteen names.

TEN BOTTLES WOODWORTH'S VIOLET INK, for ten subscribers and $25.

☞ THE CHURCH UNION is the only paper that publishes Henry Ward Beecher's Sermons, which it does each week, publishing the morning or evening Sermon of the Sunday preceding.

Send for a specimen copy, enclosing ten cents. Address,

HENRY E. CHILD, Publisher,

Ap18 3m 9 Beekman street, New York City.

METALLURGY.

WILSON'S PATENT

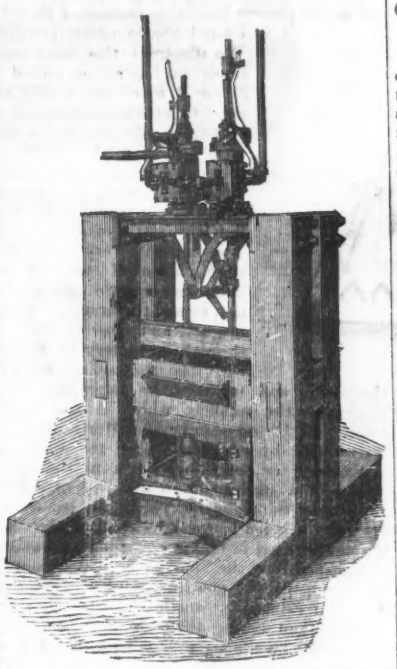
STEAM STAMP-MILL COMPANY,

OF PHILADELPHIA, PA.,

Are now prepared to supply Miners and other parties with their

NEW STEAM STAMP MILLS,

AT THE SHORTEST NOTICE.



These Mills, for durability, efficiency, and facility of transportation are not excelled by, and are believed to be superior to, any other Mills manufactured. The Valve Gear is of the simplest and most durable construction; readily adjusted by moveable cams on the Piston Rods or Stamp Stems, there by giving the operator absolute control of the length, and velocity of motion and force of the blow. These mills are adapted for both dry and wet crushing, and for the hardest rock or softest cement. For full particulars call on or address

WILSON'S PATENT STEAM STAMP MILL CO.,

326 Walnut St.,

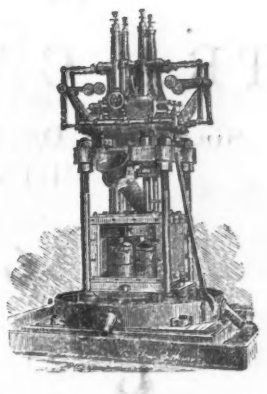
Philadelphia, Penn.

N. B.—One of the above Mills can be seen in operation at Messrs. Cresson & Smith's Machine Works, S. E. corner Eighteenth and Hamilton Sts., Philadelphia. jan11:1y

---

NEW YORK STEAM ENGINE COMPANY,

Manufacturers of



STEAM STAMPING MILL,

STATIONARY AND PORTABLE ENGINES,

Engine Lathes, Planers, Bolt Cutters, Upright Drills, and Machinist's Tools of all Descriptions.

OFFICE AND WAREROOMS, 126 & 128 CHAMBERS ST., N Y feb13:3m

THE WHELPLEY AND STORER METHOD

OF USING

PULVERIZED FUEL.

The undersigned offers for sale Rights and Machinery for employing this method, by which the Slack and Waste Coals are utilized, and made equal to solid coal, and a vastly increased efficiency obtained for all kinds of Fuel in the generation of Steam, in the heating of Furnaces, and in Metallurgic Processes.

Also,

MILLS AND FURNACE RIGHTS,

for working the Ores of Copper, Gold, Silver, Zinc, etc., according to the processes designed and employed by Messrs. W. & S.

JACOB J. STORER,

jan25:3m 105 State street, Boston.

LABORATORY OF INDUSTRIAL CHEMISTRY.

DIRECTED BY

PROF. H. DUSSAUCE, Chemist.

Advices and consultationson chemistry, applied to arts and manufactures, agriculture, metallurgy, etc.; plans of factories, drawings of apparatus. He can furnish the most recent improvements in chemical fabrications, such as chemical products, petroleum soaps, candles, colors of lead and zinc, varnishes ceramic glass, wines, liquors, vinegars, matches, inks, dyeing and calico printing, perfumery, colors of coal tar, tanning, etc., etc.

He will give all necessary information to exhibitors to the great Exhibition Address New Lebanon, Columbia Co., N. Y. 8.4.qp

---

DAVID COGHLAN

MINING ENGINEER,

SCRANTON, PA.

Would undertake to inspect or manage Gold or Silver Mines. Has had a large experience in directing mining concerns and metallurgic works, and has been employed for the last year and a half as Mining and Civil Engineer under some of the principal companies of the Anthracite regions of Pennsylvania, to whom references can be given, as well as to parties of the highest respectability in New York City. jan 18:1y

---

BENJAMIN SMITH LYMAN,

MINING ENGINEER,

GEOLOGIST AND TOPOGRAPHER,

No. 135 South Fifth Street, Philadelphia.

WM. M. GABB, late member of the Geological Survey of California, offers his professional services to the mining public, especially in connection with Gold and Silver mining. No. 138 Walnut street, Philadelphia. ap4:1f

METALLURGY.

KUSTEL'S NEW WORK.—A TREATISE ON THE

CONCENTRATION OF ALL KINDS OF ORES,

INCLUDING THE

CHLORINATION PROCESS FOR GOLD-BEARING SULPHURETS, &c.,

BY GUIDO KUSTEL,

(Mining Engineer and Metallurgist, author of "Nevada and California Processes of Silver and Gold Extraction.")

This great work should be in the hands of every mining engineer in the country. It is the only manual in the language containing the latest improvements which Science has made in the important department of concentration, and a full and detailed account of the celebrated and successful Plattner chlorination process. Both parts of the book are illustrated with diagrams and plates, so that every intelligent engineer can erect apparatus or make working drawings for himself.

PRICE TEN DOLLARS.

FOR SALE BY

WESTERN & COMPANY,

(Sole Agents for the Atlantic States, at the office of the AMERICAN JOURNAL OF MINING. feb22 tf

---

PROFESSOR HENRY WURTZ,

Formerly Chemical Examiner in the U. S. Patent Office, may be employed professionally as a SCIENTIFIC EXPERT. Geological Examinations and Reports, Analyses and Assays, etc., etc. Practical Advice and Investigations in the CHEMICAL ARTS and MANUFACTURES. Invention and Examination of new chemical methods and products. Address 26 Pine street, Rooms 35 and 36. Always in from 12 to 3.

☞ Written communications preferred.

Important to Gold and Silver Miners and Companies

PROFESSOR WURTZ,

Who is the Inventor and Patentee of the new and wonderful uses of SODIUM IN WORKING GOLD AND SILVER ORE AND JEWELERS' SWEEPINGS.

Will furnish at the above address information relating thereto together with experimental packages of

SODIUM AMALGAM.

All preparations and instructions elsewhere obtained are spurious and unreliable.

Working Experiments on Amalgamation of Ores, Etc.

Prof. W. has in operation a large and small Hepburn Pan, for working 1,000 lbs. and 20 lb. charges of material for experimental purposes.

Gold Mills and all kinds of Miners' Machinery selected with care and judgment. 8.4.xm

---

MANHATTAN

METALLURGICAL AND CHEMICAL WORKS,

552 and 554 West Twenty-eighth Street, N. Y.

ASSAYS OF GOLD, SILVER, COPPER AND LEAD ORES.

Special attention given to the Analysis of Ores, Minerals, Clays, Waters, and General Commercial Products of all kinds.

Tests of Gold, silver, and Lead Ores, by smelting, in quantities of One Hundred Pounds to Fifty Tons.

Gold and Silver Ores worked in Parcels of One Hundred Pounds to Fifty Tons, by Amalgamation Process.

Gold Dust, Bars, Old Gold and Silver bought. Jewellers' sweeps worked and refined.

Founders and Metal Workers furnished with Alloys of every description.

Parties requiring plans and specifications for the erection of Smelting Works, can be supplied, and the actual process while working shown.

Plans and specifications furnished for works, and processes for the manufacture of Sulphuric Acid, Soda Ash, and general Chemical produce.

Superintendents: MR. CHARLES F. SECOR, formerly of Nevada and California, and MR. WILLIAM WEST, formerly of Swansea, Wales.

For sale, 1 Hepburn & Peterson Pan, and 1 Bogardus Quartz Mill. Inquire at the Manhattan Metallurgical and Chemical Works, 552 and 554 West Twenty-Eighth street.

Parties shipping Ores to these works for treatment must prepay all freight charges.

For engagements and terms, apply at the Works or to

SECOR, SWAN & CO.,

P. O. Box 1412. m30:1y **66 Broadway, New York.**

HUEPEDEN & WOLTERS,

ANALYTICAL CHEMISTS and ASSAYERS.

AND CONSULTING ENGINEERS,

Central City, Colorado.

Examinations of, and Reports on Mineral Lands and Mines, furnished on application. Analyses and Assays of Ores executed with accuracy. Plans and specifications furnished for erection of Smelting Works, Desulphurizing Furnaces, &c., &c. 24:4:tf

---

CHARLES SCHENCK, a resident of Pah-Ranagat Silver Mining District, and County Surveyor of Lincoln county, Nevada, begs leave to inform the mining public, that he is able and ready to give true and valuable information about mining property in this District.

Address CHARLES SCHENCK, M. E.,

Hiko, Pahranagat District, Nevada

References—Wm. A. Smith, Esq., 25 and 27 Nassau street.

Prof. Harper, New York, etc. oct12, '67:'68

ADELBERG & RAYMOND,

MINING ENGINEERS AND METALLURGISTS,

90 BROADWAY, N. Y.

Mines, Mineral Lands, Machinery and Metallurgical or Chemical Works examined and reported upon. Advice given to miners, chemists and manufacturers. Assays and analyses made. Competent Engineers furnished to companies individuals 5:3:qp

---

R. P. ROTHWELL,

MINING & CIVIL ENGINEER AND METALLURGIST,

From the Imperial School of Mines, Paris, Member of the Geological Society of France, &c.

OFFICE, WILKESBARRE, PA.

Having had a large practical experience in Europe and this country is prepared to examine and report on all kinds of Mineral property, superintend Mines and Metallurgical Works, Assay Ores, &c. 18:2qp

---

GEO. W. MAYNARD,

PROFESSOR OF MINING and METALLURGY

AT THE RENSSELAER POLYTECHNIC INSTITUTE,

TROY, NEW YORK.

Reports, Consultations, Assays. ☞ Especial attention given to Metallurgical Operations. Jan 18.1y

---

SHEFFIELD SCIENTIFIC SCHOOL

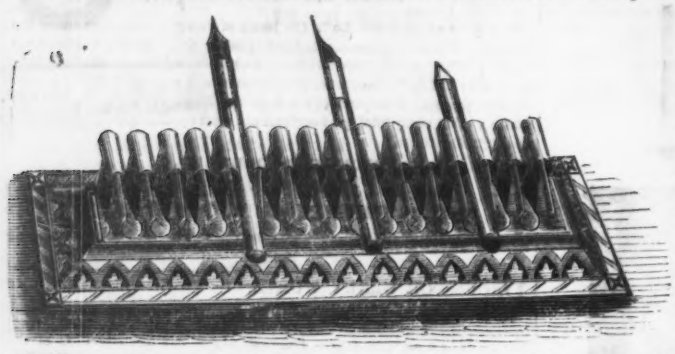
OF YALE COLLEGE,

NEW HAVEN, CONN. INSTITUTED IN 1846.

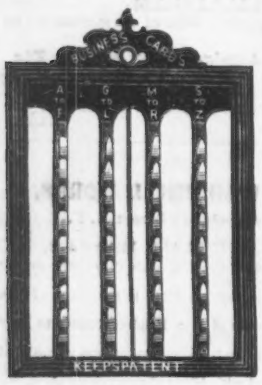
Practical Chemistry, Metallurgy, Mineralogy, Geology, Mining. Instruction given in Mechanical and Civil Engineering, etc. Circulars sent on application to Prof. D. C. GILMAN, Secretary. Ap.25:6m

PATENTED SMALL WARES.

Of these there is an infinite variety, and their name is legion. Some display ingenuity, taste and utility, while others exhibit only nonsensical "notions," and are made to sell and be sold. But what of that? The American mind is ever active and inventive, and many have been the achievements of modern genius, and after all, small inventions are the most profitable; they get publicly known the soonest and are generally suited for a large class of producers and consumers. "People cannot afford to throw away old implements unless the new ones are enough better to make up for the loss. Let inventors produce a good article, at a moderate price, and they will be sure of success." Now the annexed cuts of a Business



Card Rack and Spring Pen Rack (both patented), illustrate our remarks. The articles are neat, convenient and useful, but the greatest of these is utility. The Pen Rack possesses superior advantages over all others of its class. It is light and ornamental in appearance, and will hold pens or pencils to the number of fifteen, which are as many as any ordinary person can wish to use at one time, since even editors find the use of one pen at a time sufficient to get them into trouble, even if "the pen is mightier than the sword." The spring loops hold the pen or pencil firmly in an horizontal position and thus prevents them from falling or rolling about on the writing desk. But the Patent Business Card Rack "takes our eye" as an article that every one will praise—for its especial utility. The cards, it will be seen, are intended to be held by metallic springs; the frame, which is of black walnut, can be easily taken apart and closely packed for transportation, and re-adjusted at pleasure. The sizes of these Racks are varied to suit the requirements of purchasers. At the top of each row of springs are letters that allow the cards to be classified and arranged neatly under their respective headings; the wire at the back stiffens the frame and makes the whole article strong and desirable, not only for office, but general use. We consider the articles represented here as meritorious in design and construction, and to the patentee, J. M. KEEP, No. 8 Dey street, New York city, we are bound to send all our subscribers, new and old, in order that they may purchase card racks, and thus preserve their business cards, and our invitations for further patronage.



TELEGRAPHING INSTRUMENTS.

The usefulness and growing importance of The Electric Telegraph, in every day life, is becoming more and more apparent. New uses are being discovered with every rising sun. Telegraphic communication is being established every where, and in various ways, not only between distant points, but between city and town. Metropolitan lines are being erected for exclusive city communication; private lines for communication between office and store or manufactory, domestic lines in hotels and houses for calling servants, for alarms, &c. In no place do we see the utility of the Telegraph more than on our railroads; the railroad and telegraph necessarily go hand in hand. Since the introduction of the telegraph to railroad purposes, some twenty years ago, scarcely a railroad in the United States is without this important adjunct. Trains are regulated by it, and a single track, with a telegraph, is considered safer than a double track where the telegraph is not used. That *Great Belt*, the Pacific RR., as it stretches from point to point in its grand march across the Continent, erects the wire for telegraphic communication; the terminal station being located in a baggage car at the end of the track, which is moved forward as the rails are laid. The advantage and importance of the telegraph was demonstrated in the late war, and this branch of the service was ably managed; as it will be remembered, a set of portable instruments, with operators, &c., accompanied the army in all its movements, keeping up constant communication with head quarters at Washington. The perfection of our present system of telegraphing can hardly be estimated without comparing it with what it was twenty years ago, and we can scarcely realize that in 1848 only about 3,000 miles were in operation, and at the present time it is estimated that there are in the United States nearly 100,000 miles of wire. We illustrate this week some of the more important instruments used in telegraphing. Figure 1 represents a relay, or receiving magnet; this is the most useful instrument composing an office set, and is necessary in every office; it is used in connection with a register (fig. 2), or with a sounder (fig. 3), the electro-magnet of this instrument is inserted in, or connected with, the main circuit, or line wire, and is made with much delicacy. It is wound with very fine wire, so that a very slight current of electricity passing over the main wire and through the coil of the magnet, causes the armature to move toward the magnet, and close a local or short circuit, through a battery in the office, connected with the magnet of the register, operating the same, and making the impression on the paper, or producing the rapping, which is understood by the operator. Fig. 2 represents the Morse Register, or recording instrument, by which messages are received. The message is recorded or embossed on a narrow strip of paper by means of a steel point in one end of a lever, which is depressed by the magnet. The paper passes between two rollers and is carried forward by clock work. Fig. 3 represents a Sounder, used in taking messages by sound. On all our old established lines the Sounder is used instead of the Register, but in constructing new lines the Register is generally supplied. Taking messages by sound is considered more accurate and reliable than taking them on paper by the Morse Register. These instruments, as well as batteries, and every article connected with the building and operating of Telegraph Lines are manufactured and sold by CHARLES WILLIAMS, Jr., 109 Court street, Boston, Mass

Fig. 1.

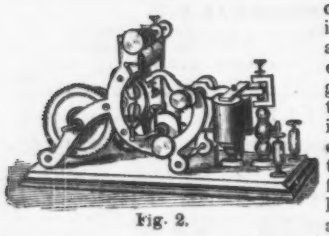


Fig. 2.

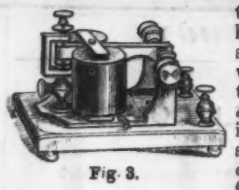


Fig. 3.

ADVERTISEMENTS.

☞ A limited number of advertisements will be admitted on this page at the rate of 40 cents per line. No extra charge for cuts.

The AMERICAN JOURNAL OF MINING has a larger circulation than any other paper of the kind published in the United States. It goes into the principal cities and towns of every State and Territory in the American Union, as well as in Mexico, the South American States, the West India Islands and Europe.

WATERBURY CLOCK COMPANY,
M. BAILEY, Treasurer.
DEALERS IN EVERY VARIETY OF
CLOCKS AND CLOCK MATERIALS,
No. 4 Cortlandt Street,
Manufactory, Waterbury, Conn. may16:2t NEW YORK.

STURTEVANT'S
NOISELESS PRESSURE BLOWERS
are made of all sizes, for all purposes where blast is required. They embrace two classes, the regular Pressure Blowers, for Rolling Mills, large and small Foundries, Forges and Blowpipes, and the second quality or cheap Blowers, for Steam Boilers, Venti lation, Coffee Roasting, &c.
For Circulars with full particulars and price lists, address
B. F. STURTEVANT,
PATENTEE AND SOLE MANUFACTURER,
ap4:12t:os 72 Sudbury street, Boston, Mass.

VERY VALUABLE GOLD MINE FOR SALE
AT AUCTION.
WILL be sold by virtue of authority vested in the undersigned, at the Exchange Sales Room in the City of Baltimore,
On Tuesday, the 23d day of June, 1868,
at one o'clock, P. M., all the property of the
BALTIMORE AND MONTGOMERY MINING COMPANY,
better known as the "STEELE GOLD MINE," on the Uharie river, in Montgomery county, *North Carolina*, containing about
700 ACRES OF LAND,
with all its equipments, consisting of two Steam Engines—one of 10 horse power, and the other of 25 horse power; Pumps; two round Buddles, 16 feet diameter; three Washers with Rocker and Sluice Boxes; buildings for Office, Store and Superintendent; a large Boarding House, Barn, Stables, Blacksmith Shop, and about 20 small Houses for Miners, &c.
This Mine is known as one of the most valuable in this country, and sufficiently developed to a depth of upwards of 150 feet, so as to justify extensive operations. The Vein is composed of argillaceous slate, and forms an auriferous bed of from 10 to 12 feet in thickness, carrying very rich string veins of free gold in its center. Thorough and reliable examinations and reports have been made by Prof. Chas. T. Jackson, of Boston; Prof. Genth, of Philadelphia, and the late Prof. Hausser, who all agree and represent this mining property of great intrinsic value. Terms to be made known on the day of sale. For further information as regards reports, &c., &c, apply to
May23:4t.os. GEO. S. BROWN, 153 Baltimore street, Baltimore, Md.

R. HOE & CO.,
MANUFACTURERS OF WARRANTED
EXTRA CAST STEEL SAWS,
OF EVERY DESCRIPTION.
Single and Double Cylinder, and Type Revolving
PRINTING MACHINES.

Circular Saws with Movable or Inserted Teeth.
The accompanying engraving represents a new and improved Circular Saw with inserted teeth, manufactured by us, and constructed on a plan in which is combined a mechanical arrangement embracing all the requirements of inserted teeth without an objectionable feature.
These saws possess great advantages over all others. The teeth are grooved all around and comprise considerably more than half a circle; consequently when they are turned into the sockets they become as firmly fixed as if they were a part of the plate itself. These saws can be run at any speed desired, and there is no possibility of the teeth being thrown out of their sockets from any cause. There are no rivets required. In these and other respects they have an advantage over all other inserted tooth saws manufactured.
Circulars and price lists will be sent on application.
R. HOE & CO.,
31 Gold Street, New York.

THIS Knife is forged from one bar of Steel, handle and blade; is heavily plated with Silver; and is the cheapest Silver-Plated Knife offered for sale

Sold, wholesale and retail, by
DAVIS COLLAMORE & CO.,
Importers of China and Glass, 479 Broadway, (four doors below Broome Street,) New York City.
Something that will not Break; a handle that will not crack; is not offensive to the smell, like rubber; is beautiful in design and finish; is the best possible article for Families, Hotels, Restaurants and Steamboats.
Made by J. RUSSELL & CO., Green River Works, Greenfield, Mass.